

MINOLTA

# Service Manual

The essentials of Imaging

**Di470  
[Field Service]**

**The Option product used with Di470 is common with Di450/Di550.**

**Please refer to Di450/Di550 Option Service Manual for Service Manual  
of the Di470 Option product.**

# **INDEX (FIELD SERVICE)**

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## 1. SAFETY PRECAUTIONS FOR INSPECTION AND SERVICE

- When performing inspection and service procedures, observe the following precautions to prevent accidents and ensure utmost safety.

\* Depending on the model, some of the precautions given in the following do not apply.

- Different markings are used to denote specific meanings as detailed below.



### WARNING

- Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



### CAUTION

- Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.
- The following graphic symbols are used to give instructions that need to be observed.



Used to call the service technician attention to what is graphically represented inside the marking (including a warning).



Used to prohibit the service technician from doing what is graphically represented inside the marking.



Used to instruct the service technician to do what is graphically represented inside the marking.

#### 1-1. Warning



### WARNING

#### 1. Always observe precautions.



- Parts requiring special attention in this product will include a label containing the mark shown on the left plus precautionary notes. Be sure to observe the precautions.
- Be sure to observe the "Safety Information" given in the Operator's Manual.



# WARNING

## 2. Before starting the procedures, be sure to unplug the power cord.



- This product contains a high-voltage unit and a circuit with a large current capacity that may cause an electric shock or burn.
- The product also contains parts that can jerk suddenly and cause injury.
- If this product uses a laser, laser beam leakage may cause eye damage or blindness.

## 3. Do not throw toner or the toner bottle into a fire.



- Do not throw toner or the Toner Bottle (Imaging Cartridge, Toner Cartridge) into a fire. Toner expelled from the fire may cause burns.

## 4. Use the specified parts.



- For replacement parts, always use the genuine parts specified in the manufacturer's parts manual. Installing a wrong or unauthorized part could cause dielectric breakdown, overload, or undermine safety devices resulting in possible electric shock or fire.
- Replace a blown electrical fuse or thermal fuse with its corresponding genuine part specified in the manufacturer's parts manual. Installing a fuse of a different make or rating could lead to a possible fire. If a thermal fuse blows frequently, the temperature control system may have a problem and action must be taken to eliminate the cause of the problem.

## 5. Handle the power cord with care and never use a multiple outlet.



- Do not break, crush or otherwise damage the power cord. Placing a heavy object on the power cord, or pulling or bending it may damage it, resulting in a possible fire or electric shock.
- Do not use a multiple outlet to which any other appliance or machine is connected.
- Be sure the power outlet meets or exceeds the specified capacity.
- Use only the power cord supplied in the package. If a power cord is not supplied, only use the power cord and plug that is specified in POWER CORD INSTRUCTION. Failure to use this cord could result in a fire or electrical shock.
- Use the power cord supplied in the package only for this machine and NEVER use it for any other product. Failure to observe this precaution could result in a fire or electrical shock.

## 6. Be careful with the high-voltage parts.



- A part marked with the symbol shown on the left carries a high voltage. Touching it could result in an electric shock or burn. Be sure to unplug the power cord before servicing this part or the parts near it.

## 7. Do not work with wet hands.



- Do not unplug or plug in the power cord, or perform any kind of service or inspection with wet hands. Doing so could result in an electric shock.



# WARNING

## 8. Do not touch a high-temperature part.



- A part marked with the symbol shown on the left and other parts such as the exposure lamp and fusing roller can be very hot while the machine is energized. Touching them may result in a burn.
- Wait until these parts have cooled down before replacing them or any surrounding parts.

## 9. Maintain a grounded connection at all times.



- Connect the power cord to an electrical outlet that is equipped with a grounding terminal.

## 10. Do not remodel the product.



- Modifying this product in a manner not authorized by the manufacturer may result in a fire or electric shock. If this product uses a laser, laser beam leakage may cause eye damage or blindness.

## 11. Restore all parts and harnesses to their original positions.



- To promote safety and prevent product damage, make sure the harnesses are returned to their original positions and properly secured in their clamps and saddles in order to avoid hot parts, high-voltage parts, sharp edges, or being crushed.
- To promote safety, make sure that all tubing and other insulating materials are returned to their original positions. Make sure that floating components mounted on the circuit boards are at their correct distance and position off the boards.

## 1-2. Caution



# CAUTION

## 1. Precautions for Service Jobs.



- A star washer and spring washer, if used originally, must be reinstalled. Omitting them may result in contact failure which could cause an electric shock or fire.
- When reassembling parts, make sure that the correct screws (size, type) are used in the correct places. Using the wrong screw could lead to stripped threads, poorly secured parts, poor insulating or grounding, and result in a malfunction, electric shock or injury.
- Take great care to avoid personal injury from possible burrs and sharp edges on the parts, frames and chassis of the product.
- When moving the product or removing an option, use care not to injure your back or allow your hands to be caught in mechanisms.

# ⚠ CAUTION

## 2. Precautions for Servicing with Covers and Parts Removed.



- Wherever feasible, keep all parts and covers mounted when energizing the product.
- If energizing the product with a cover removed is absolutely unavoidable, do not touch any exposed live parts and use care not to allow your clothing to be caught in the moving parts. Never leave a product in this condition unattended.
- Never place disassembled parts or a container of liquid on the product. Parts falling into, or the liquid spilling inside, the mechanism could result in an electric shock or fire.
- Never use a flammable spray near the product. This could result in a fire.
- Make sure the power cord is unplugged before removing or installing circuit boards or plugging in or unplugging connectors.
- Always use the interlock switch actuating jig to actuate an interlock switch when a cover is opened or removed. The use of folded paper or some other object may damage the interlock switch mechanism, possibly resulting in an electric shock, injury or blindness.

## 3. Precautions for the Working Environment.



- The product must be placed on a flat, level surface that is stable and secure.
- Never place this product or its parts on an unsteady or tilting workbench when servicing.
- Provide good ventilation at regular intervals if a service job must be done in a confined space for a long period of time.
- Avoid dusty locations and places exposed to oil or steam.
- Avoid working positions that may block the ventilation ports of the product.

## 4. Precautions for Handling Batteries. (Lithium, Nickel-Cadmium, etc.)



- Replace a rundown battery with the same type as specified in the manufacturer's parts manual.
- Before installing a new battery, make sure of the correct polarity of the installation or the battery could burst.
- Dispose of used batteries according to the local regulations. Never dispose of them at the user's premises or attempt to try to discharge one.

## 5. Precautions for the Laser Beam. (Only for Products Employing a Laser)



- Removing the cover marked with the caution label could lead to possible exposure to the laser beam, resulting in eye damage or blindness. Be sure to unplug the power cord before removing this cover.
- If removing this cover while the power is ON is unavoidable, be sure to wear protective laser goggles that meet specifications.
- Make sure that no one enters the room when the machine is in this condition.
- When handling the laser unit, observe the "Precautions for Handling Laser Equipment."

## 6. Precautions for storing the toner or imaging cartridge.



- Be sure to keep the toner or imaging cartridge out of the reach of children. Licking the imaging cartridge or ingesting its contents is harmful to your health.

### **1-3. Used Batteries Precautions**

#### **ALL Areas**

##### **CAUTION**

Danger of explosion if battery is incorrectly replaced.  
Replace only with the same or equivalent type recommended by the manufacturer.  
Dispose of used batteries according to the manufacturer's instructions.

#### **Germany**

##### **VORSICHT!**

Explosionsgefahr bei unsachgemäßem Austausch der Batterie.  
Ersatz nur durch denselben oder einen vom Hersteller empfohlenen gleichwertigen Typ.  
Entsorgung gebrauchter Batterien nach Angaben des Herstellers.

#### **France**

##### **ATTENTION**

Il y a danger d'explosion s'il y a remplacement incorrect de la batterie.  
Remplacer uniquement avec une batterie du même type ou d'un type équivalent recommandé par le constructeur.  
Mettre au rebut les batteries usagées conformément aux instructions du fabricant.

#### **Denmark**

##### **ADVARSEL!**

Lithiumbatteri - Eksplorationsfare ved fejlagtig håndtering.  
Udskiftning må kun ske med batteri af samme fabrikat og type.  
Levér det brugte batteri tilbage til leverandøren.

#### **Finland, Sweden**

##### **VAROITUS**

Paristo voi räjähtää, jos se on virheellisesti asennettu.  
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin.  
Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

##### **WARNING**

Explosionsfara vid felaktigt batteribyte.  
Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren.  
Kassera använt batteri enligt fabrikantens instruktion.

#### **Norway**

##### **ADVARSEL**

Eksplorationsfare ved feilaktig skifte av batteri.  
Brukt batteri kasseres i henhold til fabrikantens instruksjoner.

## **1-4. Other Precautions**

- When handling circuit boards, observe the "HANDLING of PWBS".
- The PC Drum is a very delicate component. Observe the precautions given in "HANDLING OF THE PC DRUM" because mishandling may result in serious image problems.
- Note that replacement of a circuit board may call for readjustments or resetting of particular items, or software installation.

## **1-5. Precautions for Service**

- When performing inspection and service procedures, observe the following precautions to prevent mishandling of the machine and its parts.

\* Depending on the model, some of the precautions given in the following do not apply.

### **1. Precautions Before Service**

- When the user is using a word processor or personal computer from a wall outlet of the same line, take necessary steps to prevent the circuit breaker from opening due to overloads.
- Never disturb the LAN by breaking or making a network connection, altering termination, installing or removing networking hardware or software, or shutting down networked devices without the knowledge and express permission of the network administrator or the shop supervisor.

### **2. How to Use this Book**

#### **DIS/REASSEMBLY, ADJUSTMENT**

- To reassemble the product, reverse the order of disassembly unless otherwise specified.

#### **TROUBLESHOOTING**

- If a component on a PWB or any other functional unit including a motor is defective, the text only instructs you to replace the whole PWB or functional unit and does not give troubleshooting procedures applicable within the defective unit.
- All troubleshooting procedures contained herein assume that there are no breaks in the harnesses and cords and all connectors are plugged into the right positions.
- The procedures preclude possible malfunctions due to noise and other external causes.

### **3. Precautions for Service**

- Keep all disassembled parts in good order and keep tools under control so that none will be lost or damaged.
- After completing a service job, perform a safety check. Make sure that all parts, wiring and screws are returned to their original positions.
- Do not pull out the toner hopper while the toner bottle is turning. This could result in a damaged motor or locking mechanism.
- If the product is to be run with the front door open, make sure that the toner hopper is in the locked position.
- Do not use an air gun or vacuum cleaner for cleaning the ATDC Sensor and other sensors, as they can cause electrostatic destruction. Use a blower brush and cloth. If a unit containing these sensors is to be cleaned, first remove the sensors from the unit.

#### **4. Precautions for Dis/Reassembly**

- Be sure to unplug the copier from the outlet before attempting to service the copier.
- The basic rule is not to operate the copier anytime during disassembly. If it is absolutely necessary to run the copier with its covers removed, use care not to allow your clothing to be caught in revolving parts such as the timing belt and gears.
- Before attempting to replace parts and unplug connectors, make sure that the power cord of the copier has been unplugged from the wall outlet.
- Be sure to use the Interlock Switch Actuating Jig whenever it is necessary to actuate the Interlock Switch with the covers left open or removed.
- While the product is energized, do not unplug or plug connectors into the circuit boards or harnesses.
- Never use flammable sprays near the copier.
- A used battery should be disposed of according to the local regulations and never be discarded casually or left unattended at the user's premises.
- When reassembling parts, make sure that the correct screws (size, type) and toothed washer are used in the correct places.

#### **5. Precautions for Circuit Inspection**

- Never create a closed circuit across connector pins except those specified in the text and on the printed circuit.
- When creating a closed circuit and measuring a voltage across connector pins specified in the text, be sure to use the GND wire.

#### **6. Handling of PWBs**

##### **During Transportation/Storage**

- During transportation or when in storage, new P.W. Boards must not be indiscriminately removed from their protective conductive bags.
- Do not store or place P.W. Boards in a location exposed to direct sunlight and high temperature.
- When it becomes absolutely necessary to remove a Board from its conductive bag or case, always place it on its conductive mat in an area as free as possible from static electricity.
- Do not touch the pins of the ICs with your bare hands.
- Protect the PWBs from any external force so that they are not bent or damaged.

##### **During Inspection/Replacement**

- Avoid checking the IC directly with a multimeter; use connectors on the Board.
- Never create a closed circuit across IC pins with a metal tool.
- Before unplugging connectors from the P.W. Boards, make sure that the power cord has been unplugged from the outlet.
- When removing a Board from its conductive bag or conductive case, do not touch the pins of the ICs or the printed pattern. Place it in position by holding only the edges of the Board.
- When touching the PWB, wear a wrist strap and connect its cord to a securely grounded place whenever possible. If you cannot wear a wrist strap, touch a metal part to discharge static electricity before touching the PWB.
- Note that replacement of a PWB may call for readjustments or resetting of particular items.

#### **7. Handling of Other Parts**

- The magnet roller generates a strong magnetic field. Do not bring it near a watch, floppy disk, magnetic card, or CRT tube.

## 8. Handling of the PC Drum

\* Only for Products Not Employing an Imaging Cartridge.

### During Transportation/Storage

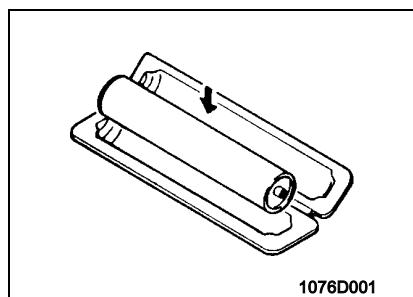
- Use the specified carton whenever moving or storing the PC Drum.
- The storage temperature is in the range between -20°C and +40°C.
- In summer, avoid leaving the PC Drum in a car for a long time.

### Handling

- Ensure that the correct PC Drum is used.
- Whenever the PC Drum has been removed from the copier, store it in its carton or protect it with a Drum Cloth.
- The PC Drum exhibits greatest light fatigue after being exposed to strong light over an extended period of time. Never, therefore, expose it to direct sunlight.
- Use care not to contaminate the surface of the PC Drum with oil-base solvent, finger-prints, and other foreign matter.
- Do not scratch the surface of the PC Drum.
- Do not apply chemicals to the surface of the PC Drum.
- Do not attempt to wipe clean the surface of the PC Drum.

If, however, the surface is contaminated with fingerprints, clean it using the following procedure.

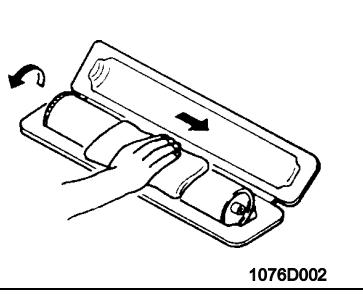
A. Place the PC Drum into one half of its carton.

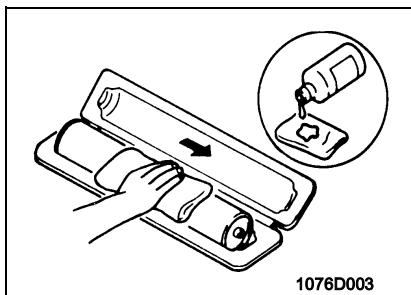


B. Gently wipe the residual toner off the surface of the PC Drum with a dry, Dust-Free Cotton Pad.

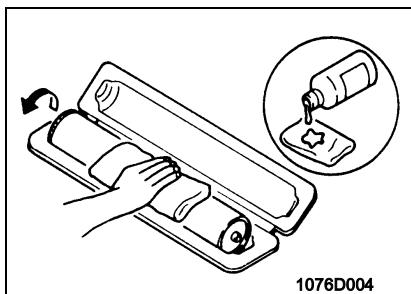
- Turn the PC Drum so that the area of its surface on which the line of toner left by the Cleaning Blade is present is facing straight up. Wipe the surface in one continuous movement from the rear edge of the PC Drum to the front edge and off the surface of the PC Drum.
- Turn the PC Drum slightly and wipe the newly exposed surface area with a CLEAN face of the Dust-Free Cotton Pad. Repeat this procedure until the entire surface of the PC Drum has been thoroughly cleaned.

\* At this time, always use a CLEAN face of the dry Dust-Free Cotton Pad until no toner is evident on the face of the Pad after wiping.





- C. Soak a small amount of either ethyl alcohol or isopropyl alcohol into a clean, unused Dust-Free Cotton Pad which has been folded over into quarters. Now, wipe the surface of the PC Drum in one continuous movement from its rear edge to its front edge and off its surface one to two times.  
\* Never move the Pad back and forth.



- D. Using the SAME face of the Pad, repeat the procedure explained in the latter half of step 3 until the entire surface of the PC Drum has been wiped. Always OVERLAP the areas when wiping. Two complete turns of the PC Drum would be appropriate for cleaning.

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#### NOTES

- Even when the PC Drum is only locally dirtied, wipe the entire surface.
  - Do not expose the PC Drum to direct sunlight. Clean it as quickly as possible even under interior illumination.
  - If dirt remains after cleaning, repeat the entire procedure from the beginning one more time.
- 

## 9. Handling of the Imaging Cartridge and Print Unit

\* Only for Products Employing an Imaging Cartridge and Print Unit.

### During Transportation/Storage

- The storage temperature is in the range between -20 °C and +40 °C.
- In summer, avoid leaving the Imaging Cartridge and Print Unit in a car for a long time.

### Handling

- Store the Imaging Cartridge and Print Unit in a place that is not exposed to direct sunlight.

### Precautionary Information on the PC Drum Inside the Imaging Cartridge and Print Unit.

- Use care not to contaminate the surface of the PC Drum with oil-base solvent, fingerprints, and other foreign matter.
- Do not scratch the surface of the PC Drum.
- Do not attempt to wipe clean the surface of the PC Drum.

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# **DIS/REASSEMBLY, ADJUSTMENT**

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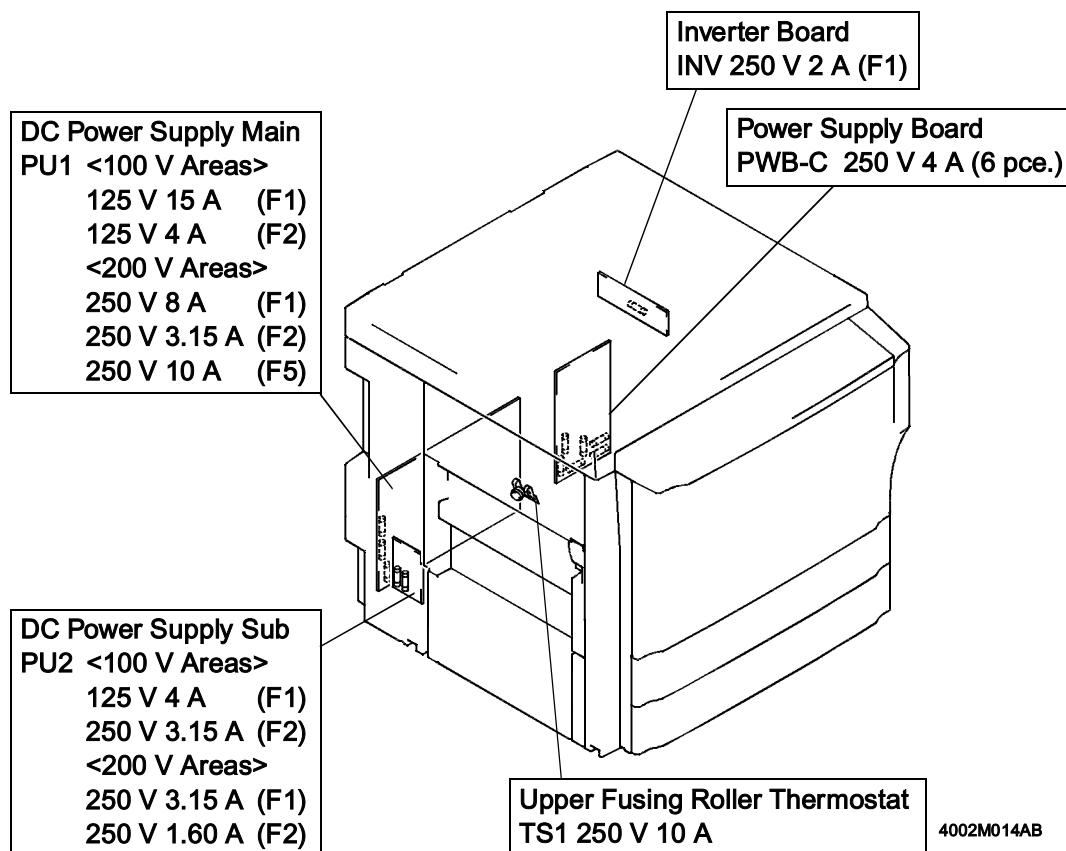
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# 1. SERVICE INSTRUCTIONS

## 1-1. IDENTIFICATION OF FUSES AND CIRCUIT BREAKERS



## 1-2. Safety information

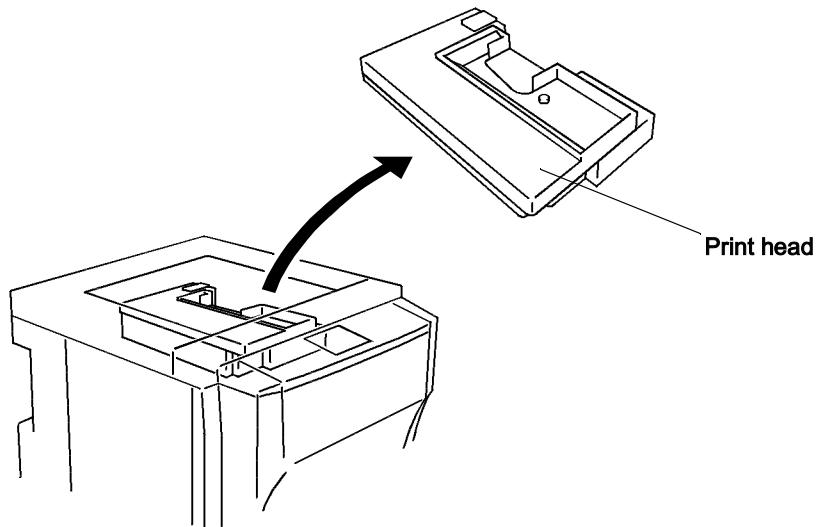
### (1) Laser Safety

- This is a digital machine certified as a class 1 laser product. There is no possibility of danger from a laser, provided the machine is serviced according to the instruction in this manual.

### (2) Internal Laser Radiation

semiconductor laser	
Maximum average radiation power(*)	13.6μW
Wavelength	785 nm

- This product employs a Class 3b laser diode that emits an invisible laser beam. The laser diode and the scanning polygon mirror are incorporated in the print head unit.
- The print head unit is NOT A FIELD SERVICE ITEM. Therefore, the print head unit should not be opened under any circumstances.



4002O277AA

**the U.S.A., Canada**

**(CDRH Regulation)**

- This machine is certified as a Class I Laser product under Radiation Performance Standard according to the Food, Drug and Cosmetic Act of 1990. Compliance is mandatory for Laser products marketed in the United States and is reported to the Center for Devices and Radiological Health (CDRH) of the U.S. Food and Drug Administration of the U.S. Department of Health and Human Services (DHHS). This means that the device does not produce hazardous laser radiation.
- The label shown to page 13 indicates compliance with the CDRH regulations and must be attached to laser products marketed in the United States.

**CAUTION**

Use of controls, adjustments or performance of procedures other than those specified in this manual may result in hazardous radiation exposure.

semiconductor laser	
Maximum power of the laser diode	13.6µW
Wavelength	785 nm

**All Areas**

**CAUTION**

Use of controls, adjustments or performance of procedures other than those specified in this manual may result in hazardous radiation exposure.

semiconductor laser	
Maximum power of the laser diode	13.6µW
Wavelength	785 nm

**Denmark**

**ADVARSEL**

Usynlig laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion.  
Undgå udsættelse for stråling. Klasse 1 laser produkt der opfylder IEC60825 sikkerheds kravene.

halvlederlaser	
Laserdiодens højeste styrke	13.6µW
bølgelængden	785 nm

**Finland, Sweden**

LUOKAN 1 LASERLAITE  
KLASS 1 LASER APPARAT

**VAROITUS!**

Laitteen käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyttäjän turvallisuusluokan 1 ylittäville näkymättömälle lasersäteilylle.

puolijohdelaser

Laserdiodin suurin teho	13.6µW
aallonpituuus	785 nm

**VARNING!**

Om apparaten används på annat sätt än i denna bruksanvisning specificerats, kan användaren utsättas för osynlig laserstrålning, som överskrider gränsen för laserklass 1.

halvledarlaser

Den maximala effekten för laserdioden	13.6µW
våglängden	785 nm

**VARO!**

Avattaessa ja suojalukitus ohitettaessa olet alittiina näkymättömälle lasersäteilylle. Älä katso säteeseen.

**VARNING!**

Osynlig laserstrålning när denna del är öppnad och spärren är urkopplad. Betrakta ej strålen.

**Norway****ADVERSEL**

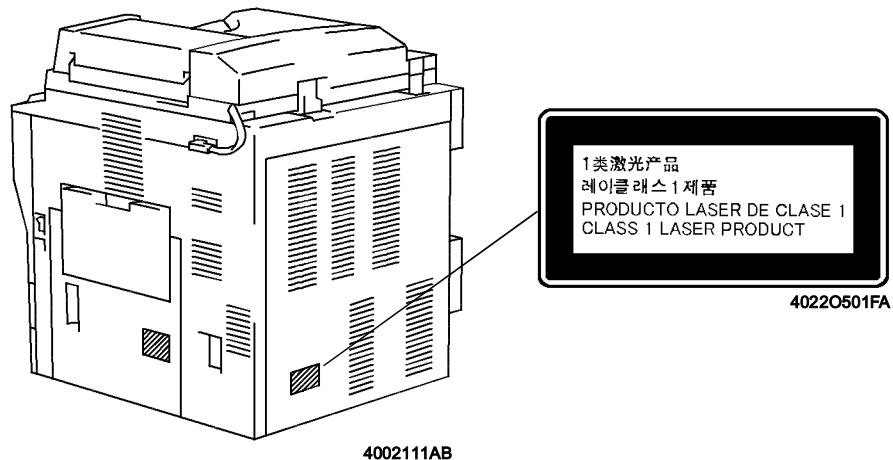
Dersom apparatet brukes på annen måte enn spesifisert i denne bruksanvisning, kan brukeren utsettes for unsynlig laserstrålning, som overskridt grensen for laser klasse 1.

halvleder laser

Maksimal effekt til laserdiode	13.6µW
bølgelengde	785 nm

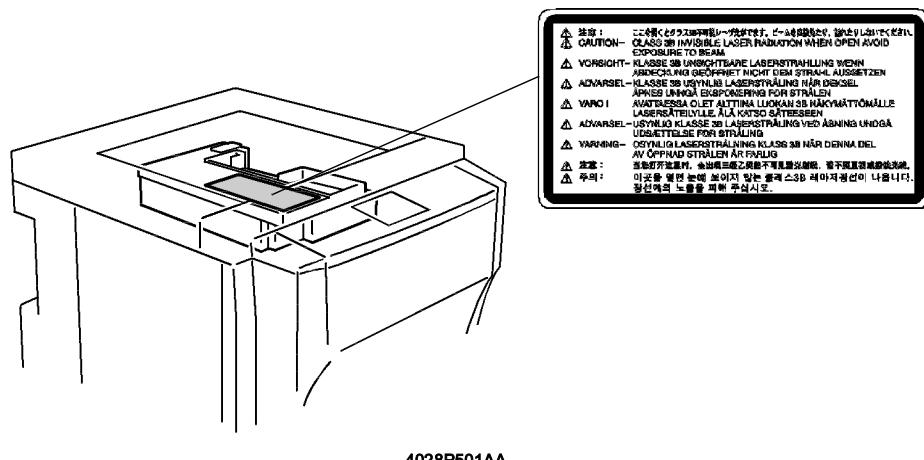
## **1-3. Laser Safety Label**

- A laser safety label is attached to the outside of the machine as shown below.



## **1-4. Laser Caution Label**

- A laser caution label is attached to the inside of the machine as shown below.



## **1-5. PRECAUTIONS FOR HANDLING THE LASER EQUIPMENT**

- When laser protective goggles are to be used, select ones with a lens conforming to the above specifications.
- When a disassembly job needs to be performed in the laser beam path, such as when working around the printerhead and PC Drum, be sure first to turn the printer OFF.
- If the job requires that the printer be left ON, take off your watch and ring and wear laser protective goggles.

A highly reflective tool can be dangerous if it is brought into the laser beam path. Use utmost care when handling tools on the user's premises.

## **1-6. PARTS WHICH MUST NOT BE TOUCHED**

### **(1) Red painted Screws**

#### **Purpose of Application of Red Paint**

Red painted screws show that the assembly or unit secured can only be adjusted or set at the factory and should not be adjusted, set, or removed in the field.

Note that when two or more screws are used on the part in question, only one representative screw may be marked with red paint.

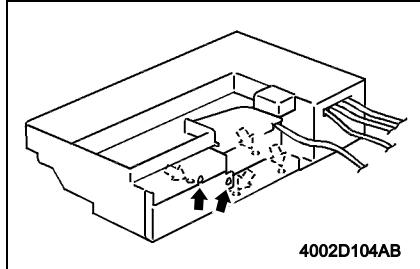
### **(2) Variable Resistors on Board**

Do not turn the variable resistors on boards for which no adjusting instructions are given in "ADJUSTMENT."

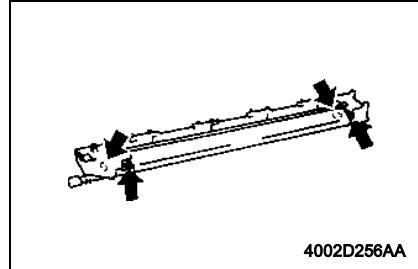
### **(3) Other Screws**

Although not marked with red paint, the following screws must not be loosened or readjusted.

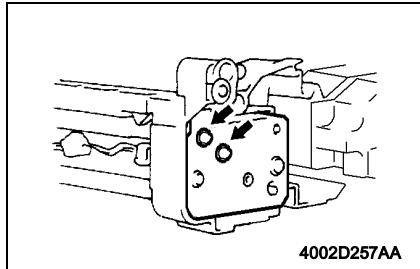
8 screws on the PH Unit Cover



4 screws on the Image Transfer/  
Paper Separator Coronas

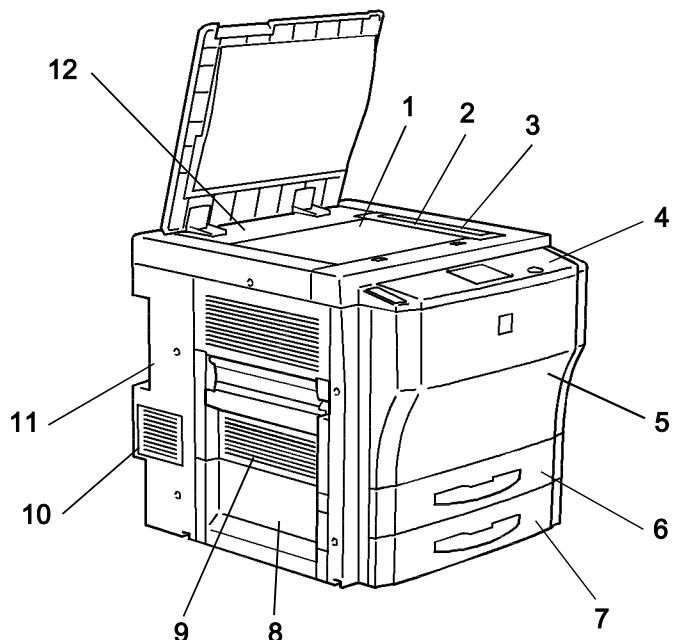


2 screws on the Separator  
Finger Solenoid

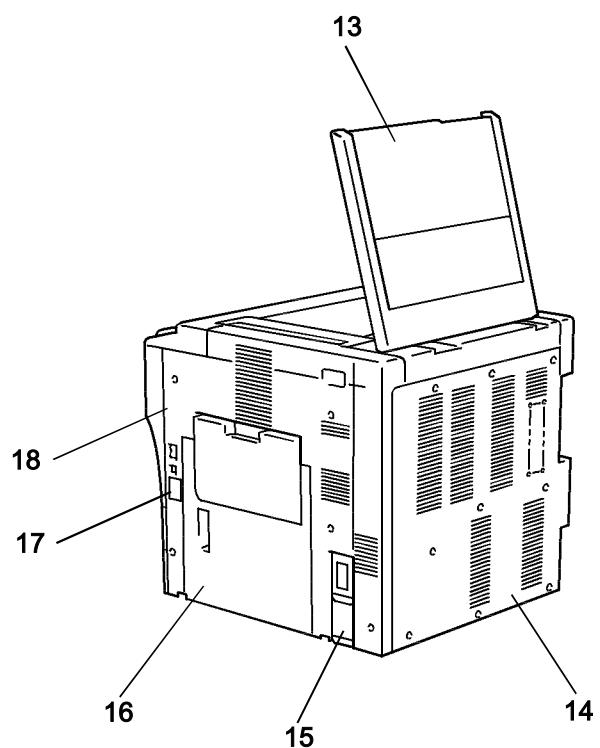


## **2. DISASSEMBLY/REASSEMBLY**

### **2-1. DOORS, COVERS, AND EXTERIOR PARTS: IDENTIFICATION AND REMOVAL PROCEDURES**



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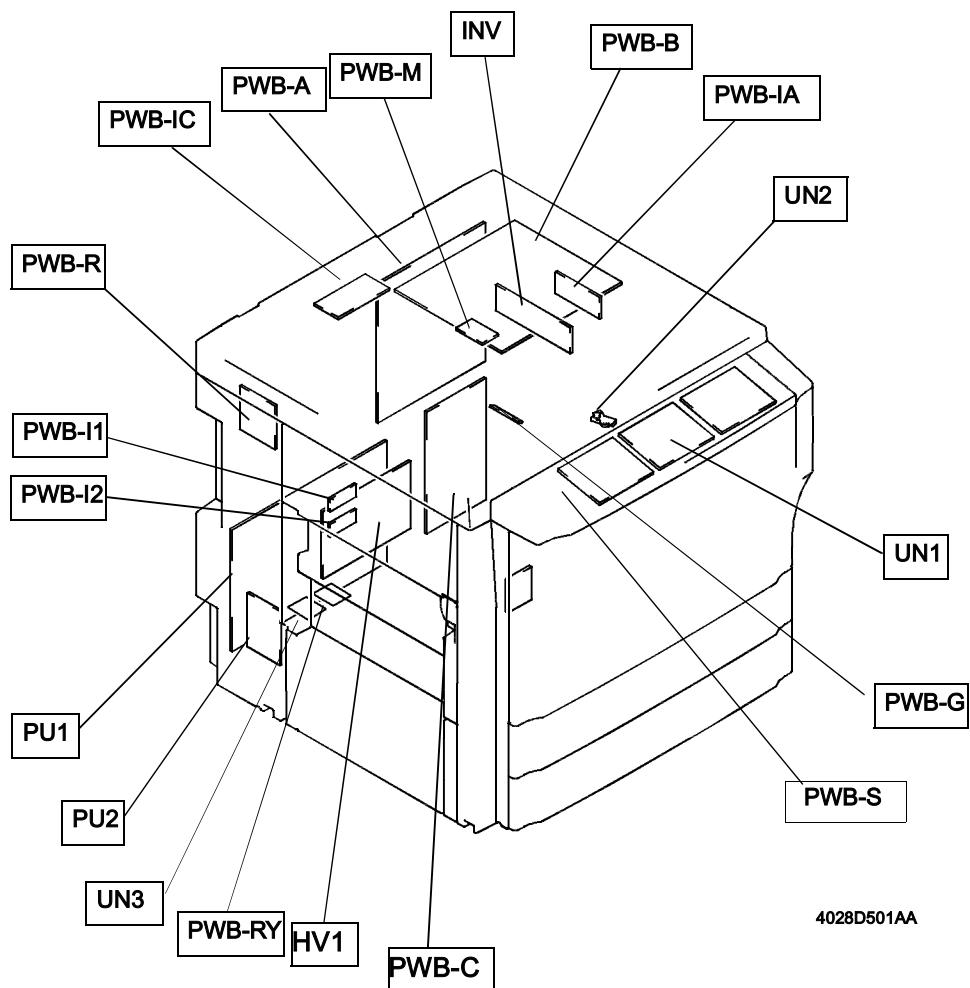


4002D026AC

No.	Part Name	Removal Procedure
1	Original Glass	Remove No. 3.
2	EDH Glass	Remove No. 3.
3	EDH Glass Holder	Raise No. 13. -> Remove four EDH Glass Holder mounting screws.
4	Control Panel	<del>D-11</del>
5	Front Door	Swing down the Front Door. -> Remove two Front Door hinge shafts. -> Remove two belt mounting screws inside the Front Door.
6	1st Drawer	Slide out the drawer. -> Remove one right stopper mounting screw. ->
7	2nd Drawer	Pressing the tab on the left rail, pull out the drawer.
8	Middle Left Door	Remove No. 11. -> Remove two Middle Left Door mounting screws.
9	Upper Left Door (Exit/Duplex Switching Unit)	<del>D-22</del>
10	Filter Cover	Unhook one tab on the Filter Cover.
11	Left Cover	Slide out No. 6. -> Swing down No. 5. -> Remove seven Left Cover mounting screws.
12	Rear Upper Cover	Remove No. 13. -> Remove No. 11. -> Remove No. 18. -> Remove two Rear Upper Cover mounting screws.
13	Original Cover	Pull up the Original Cover off the copier.
14	Rear Cover	Remove nine Rear Cover mounting screws.
15	Connector Cover	Remove one Connector Cover mounting screw.
16	Upper Right Door (Multi Bypass Unit)	<del>D-17</del>
17	Counter Cover	Unhook two tabs on the Counter Cover.
18	Right Cover	Slide out No. 6. -> Swing down No. 5. -> Open No. 16. -> Open the Multi Bypass Table. -> Remove seven Right Cover mounting screws.

## 2-2. REMOVAL OF CIRCUIT BOARDS AND OTHER ELECTRICAL COMPONENTS

- When removing a circuit board or other electrical component, refer to "Handling of PWBS" and follow the corresponding removal procedures.
- The removal procedures given in the following omit the removal of connectors and screws securing the circuit board support or circuit board.
- Where it is absolutely necessary to touch the ICs and other electrical components on the board, be sure to ground your body.

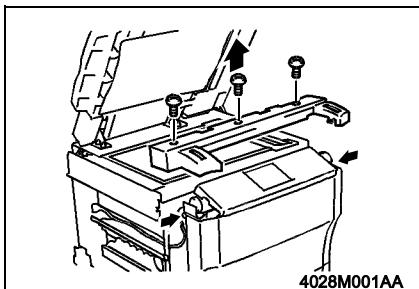


4028D501AA

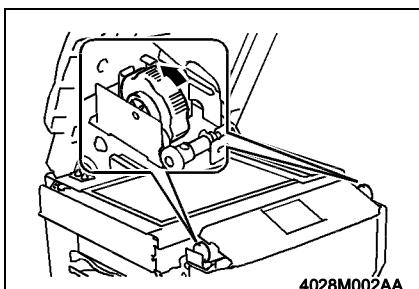
Symbol	Part Name	Removal Procedure
INV	Inverter Board	Remove the Scanner. -> Remove four screws and the Inverter Board Assy. -> INV
PWB-A	Master Board	Remove the Right Cover. -> Remove the Rear Cover. -> Remove three screws and the cover. -> Remove four screws and the cover. -> PWB-A
PWB-B	Image Processing Board	<b>D-12</b>
PWB-C	Power Supply Board	Remove the Right Cover. -> Remove the Rear Cover. -> Remove six screws and the PWB cover. -> PWB-C
PWB-G	AIDC Sensor Board	<b>D-52</b>
PWB-IA	CCD Board	Remove the Rear Cover. -> Remove the Right Cover. -> Remove the Original Glass. -> Remove the CCD Unit Cover. -> Remove the CCD Unit.
PWB-I1	Paper Size Detecting Board 1	Remove four screws and the PC Drum Charge/Developing Bias HV Mounting Bracket Assy. -> Remove two screws and the PWB cover. -> PWB-I
PWB-I2	Paper Size Detecting Board 2	Remove four screws and the PC Drum Charge/Developing Bias HV Mounting Bracket Assy. -> Remove two screws and the PWB cover. -> PWB-I
PWB-IC	SCP Board	Remove the Rear Upper Cover. -> PWB-IC
PWB-M	Memory Board	Remove the Original Glass. -> Remove four screws and the IR Base Plate Left Cover. -> PWB-M
PWB-R	HDD Power Supply Board	Remove the Rear Cover. -> Remove the Left Cover. -> Remove three screws and the HDD Mounting Bracket Assy. -> PWB-R
PWB-S	Tech. Rep. Setting Switches Board	Swing Down the Front Door. -> Remove the Left Cover. -> Remove four screws and the cover. -> PWB-S
PWB-RY	Heater Relay Board	Remove the Rear Cover. -> Remove four screws and PWB-RY.
UN1	Control Panel	<b>D-11</b>
UN2	ATDC Sensor	<b>D-46</b>
UN3	Triac Board	Remove the Rear Cover. -> Remove three screws and UN3.
PU1	DC Power Supply Main	Remove the Rear Cover. -> Remove six screws and the PWB cover. -> PU1
PU2	DC Power Supply Sub	Remove the Rear Cover. -> Remove the Left Cover. -> Remove three screws and the DC Power Supply Sub Mounting Bracket Assy. -> PU2
HV1	PC Drum Charge/Developing Bias HV	Remove the Rear Cover. -> Remove six screws and the PWB cover. -> Remove ten screws and the DC Power Supply Main Mounting Bracket Assy. -> HV1

## Remove the Control Panel

1. Remove the Right Cover and Left Cover.



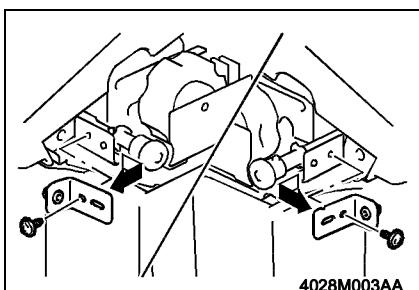
2. Remove five screws and the Front Upper Cover.



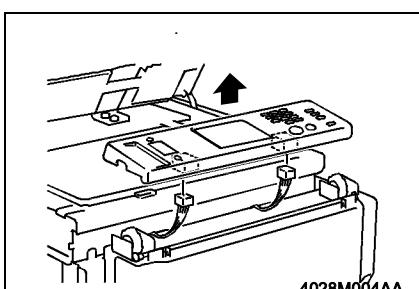
3. Turn the dial to raise the control panel as far as it will go.



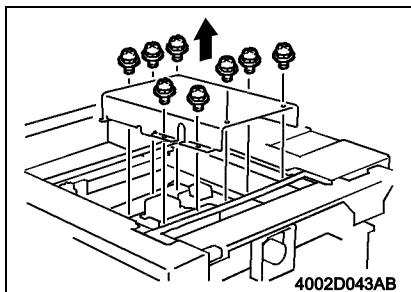
4. Remove two screws and the fixing brackets on both sides of the control panel.



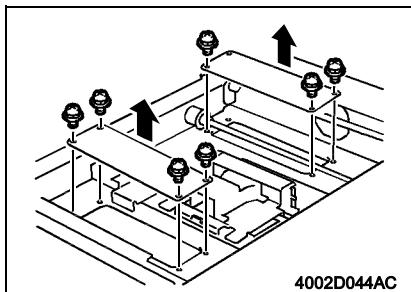
5. Disconnect the wiring and remove the control panel.



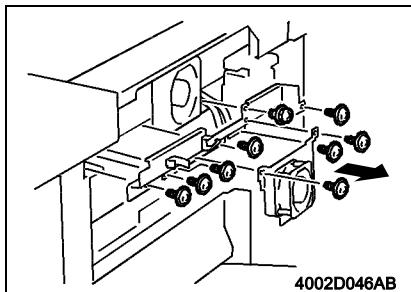
### Removal of the Image Processing Board



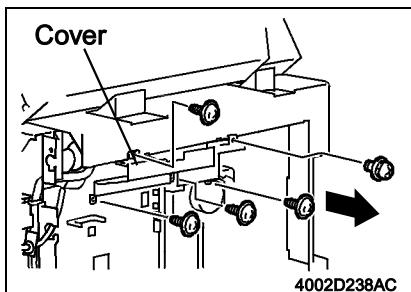
6. Remove the Rear Cover and Right Cover.
7. Remove the Original Glass and EDH Glass.
8. Remove eight screws and the CCD Unit Cover.



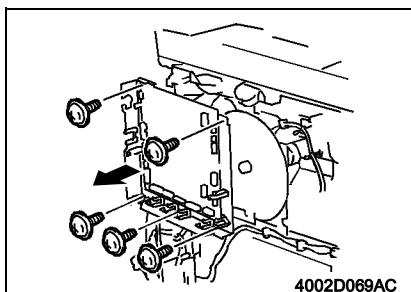
9. Remove four screws and the cover on the left.
10. Remove three screws and the cover on the right.



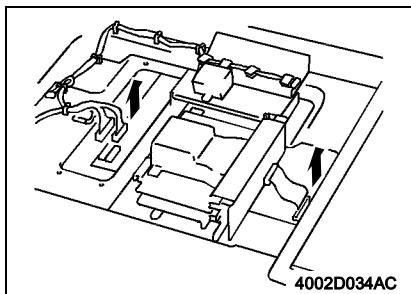
11. Remove three screws and the PH Cooling Fan Motor mounting bracket Assy.
12. Remove six screws and the mounting bracket.



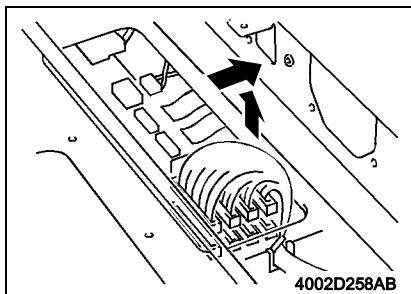
13. Remove five screws and the Cover.



14. Remove five screws and the Master Board Mounting Bracket Assy.

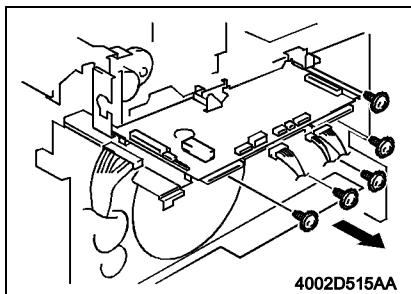


15. Unplug two connectors, one flat cable.



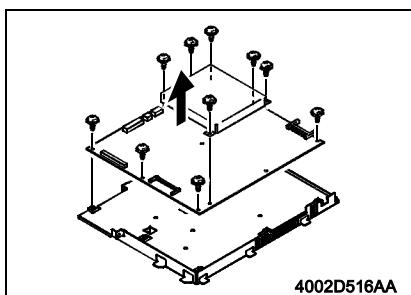
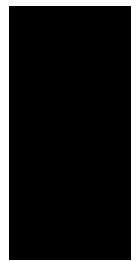
16. Unplug five connectors, two flat cables.

17. Remove the harness from the edge cover.



18. Unplug four connectors.

19. Remove five screws and the Imaging Processing Board Mounting Bracket Assy.



20. Remove ten screws and the Imaging Processing Board.

## **2-3. MAINTENANCE SCHEDULE**

- To ensure that the copier produces good copies and to extend its service life, it is recommended that the maintenance jobs described in this schedule be carried out as instructed.

	PM Parts	Maintenance Cycle (K)		QTY	Reference Page	PM
		Clean	Replace			
Paper Take-Up/Transport Section	Paper Take-Up Roll	80	160	2	D-23	1st Drawer 2nd Drawer
	Paper Feed Roll (*1)	80	160	2	D-23	
	Paper Separator Roll Assy. (*1)	80	160	2	D-23	
	Upper Transport Roller	80	—	—	D-26	Cleaning 1
	Lower Transport Roller	80	—	—	D-26	
	Vertical Transport Rollers	80	—	—	D-29	
	Upper Synchronizing Roller	80	—	—	D-29	
	Lower Synchronizing Roller	80	—	—	D-29	
	Synchronizing Paper Dust Remover	80	160	1	D-32	Other PM Parts 2 Cleaning 1
	Transport Paper Dust Remover	80	160	1	D-32	
Optical Section	Multi Bypass Unit Paper Take-Up Roll	(*2)	—	—	D-34	Manual Feed
	Multi Bypass Unit Paper Feed Roll	(*2)	—	—	D-36	
	Multi Bypass Unit Paper Separator Roll	(*2)	—	—	D-36	
	Mirrors	160	—	—	D-37	
	Lens	160	—	—	D-37	
PC Section	Scanner Rail/Slider Bushings	160 (*3)	—	—	D-38	(*6)
	Original Glass	80	—	—	D-37	
	PH Glass	80	—	—	D-38	
	EDH Glass	As required	—	—	D-40	
	PC Drum	—	(*4)	—	D-46	PC Drum 1, 2, 3
	Cleaning Blade	—	240	1	D-49	Developer 1, 2
	Toner Antispill Seal	80	240	1	D-52	Developer 1 Cleaning 1
	Main Erase Lamp Filter	80	—	—	D-53	Cleaning 1
	AIDC Sensor Board	80	—	—	D-52	
	PC Drum Paper Separator Fingers	80	—	—	D-52	
	Ozone Filter (Drum Charge)	—	240	1	D-54	Ozone Filter
	Ozone Filter (Image Transfer)	—	240	1	D-54	
	Toner Collecting Bottle (*5)	—	(*4)	1	D-54	

	PM Parts	Maintenance Cycle (K)		QTY	Reference Page	PM
		Clean	Replace			
Drum Charge/Image Transfer Coronas	PC Drum Charge Corona Grid Mash	80	—	—	D-56	Cleaning 1
	PC Drum Charge Corona Housing	80	—	—	D-55	
	PC Drum Charge Corona Comb Electrode	80	240	1	D-57	
	Image Transfer/Paper Separator Corona Housing	80	—	—	D-59	Developer 1, 2 Cleaning 1
	Image Transfer/Paper Separator Corona Wire	80	160	2	D-58	
	Pre-Image Transfer Guide Plate	80	—	—	D-60	
Developing Section	Developer	—	240	—	D-51	Developer 1, 2
	Ds Positioning Collars	80	—	—	D-49	Cleaning 1
	Developer Scattering Prevention Plate	80	240	1	D-49	Developer 1, 2 Cleaning 1
	Toner Antisocial Trap	80	—	—	D-49	Cleaning 1
Fusing Section	Upper Fusing Roller	—	480	1	D-61	Fusing Roller
	Upper Fusing Roller Bearings	—	960	2	D-61	Fusing Unit
	Upper Fusing Roller Bushings	—	480	2	D-61	Fusing Roller
	Lower Fusing Roller	—	480	1	D-61	
	Lower Fusing Roller Bearings	—	960	2	D-61	Fusing Unit
	Upper Fusing Roller Drive Gear	—	480	1	D-61	Fusing Roller
	Web Roller	—	480	1	D-70	
	Web Pressure Roller	—	960	1	D-71	Fusing Unit
	Upper Paper Separator Fingers	240	960	5	D-65	Cleaning 2 Fusing Unit
	Lower Paper Separator Fingers	240	—	—	D-66	Cleaning 2
	Fusing Unit Entrance Guide Plate	240	—	—	D-66	
	Upper Fusing Roller Thermistor	160	960	1	D-67	Cleaning 3 Fusing Unit
	Fusing Roller Sub Thermistor	160	960	1	D-68	
	Lower Fusing Roller Thermistor	160	960	1	D-69	
	Upper Fusing Roller Thermostat	480	—	—	D-70	Cleaning 3
	Misfeed Clearing Knob Bushings	—	480	1	D-72	Fusing Unit
	Fusing Unit Drive Coupling Gear	—	480	1	D-72	Fusing Roller

	PM Parts	Maintenance Cycle (K)		QTY	Reference Page	PM
		Clean	Replace			
Turnover Section	Turnover Roller	80	—	—	☞ D-72	Cleaning 1
	Transport Roller	80	—	—	☞ D-72	

\* Perform the maintenance jobs based on the PM Counter count.

\*1: Replace the Paper Feed Roll and Paper Separator Roll Assy at the same time.

\*2: Perform cleaning when a malfunction occurs.

\*3: Lubricate after cleaning.

\*4: Replace at 130 hours.

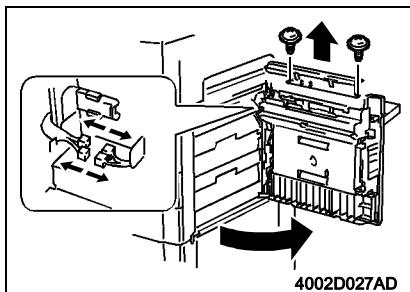
The replacement cycle of the PC Drum is determined by the number of hours, through which the PC Drum has turned (distance). The figure for the replacement cycle given in the table represents the number of copies made for standard copying (A4C, making five copies per job).

\*5: Mounted on the applicable paper source option.

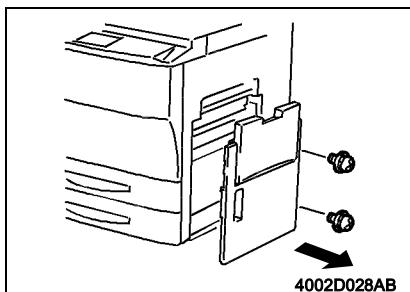
\*6: Use the Total Counter for the control.

## 2-4. Removal of the Unit

### (1) Removal of the Multi Bypass Unit



1. Open the Upper Right Door.
2. Remove two connectors and the cover.
3. Unplug two connectors.



4. Remove two screws and the Upper Right Cover.

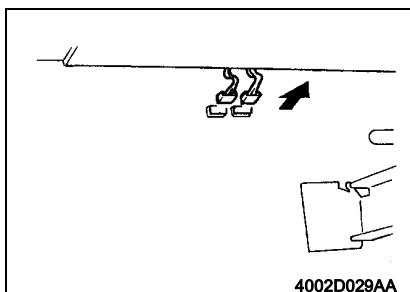
**NOTE**

*When reinstalling the Upper Right Cover, Adjustment of the Upper Right Door (Multi Bypass Unit).*

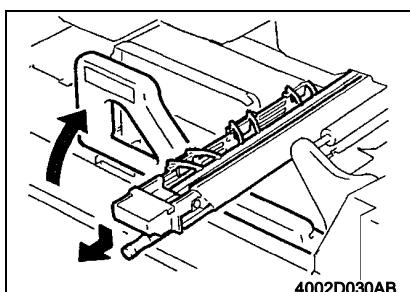
☞ D-112

### (2) Removal of the Suction Unit

1. Swing down the Front Door and slide out the Developer Unit.
2. Remove the Paper Dust Remover Assy.
3. Slide out the Fusing Unit.
4. Slide out the 1st and 2nd Drawers.

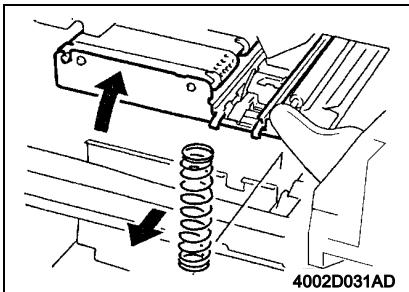


5. Unplug two connectors from lower end of the Suction Unit.

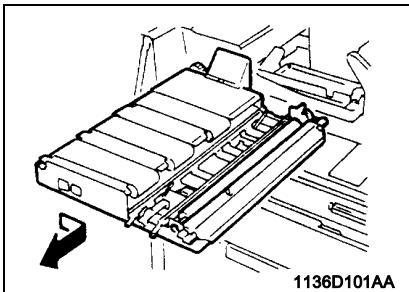


6. Swing the Transport Section Release Lever back to its original position.
7. Pressing down the Transfer/Paper Separator Coronas Unit, pull out of the copier.

8. Swing down the Transport Section Release Lever.
9. Holding up the Suction Unit, remove the compression coil.



10. Remove the Suction Unit by sliding it to the right.

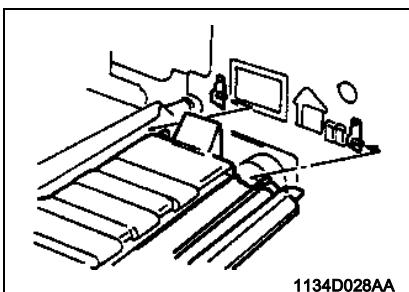


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**NOTE**

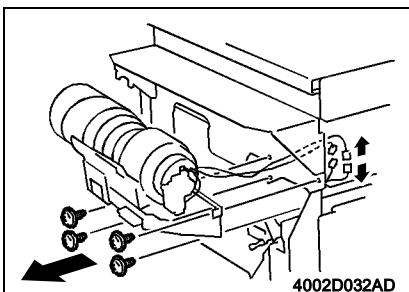
*When reinstalling the Suction Unit, make sure that two positioning pins on the copier fit into the positioning holes in the Suction Unit.*

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**(3) Removal of the Main Hopper Unit**

1. Swing down the Front Door and slide out the Developer Unit.
2. Remove the Right Cover.

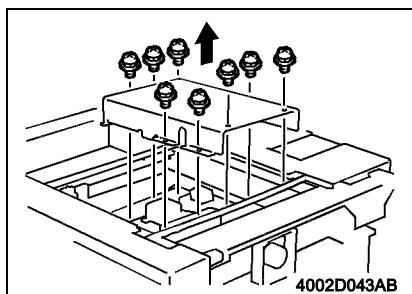
3. Unplug two connectors, remove four screws and remove the Main Hopper Unit.



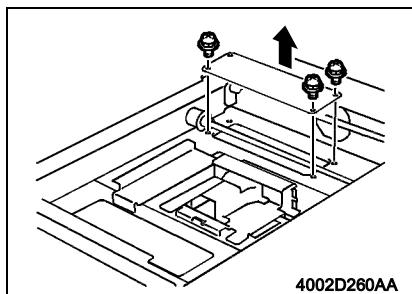
#### (4) Removal of the PH Unit

##### NOTES

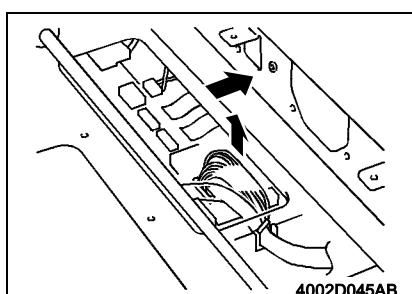
- Do not place the PH Unit upside down, tilt it excessively, or subject it to excessive shock.
- Replace the PH Unit as one unit.
- NEVER attempt to disassemble or adjust the PH Unit.
- Whenever the PH Unit has been removed, make the following adjustments:  
*Lead/Trail Edge Erase and Registration (CD/FD).*



1. Remove the Right Cover.
2. Remove the Original Glass and EDH Glass.
3. Remove eight screws and the CCD Unit Cover.

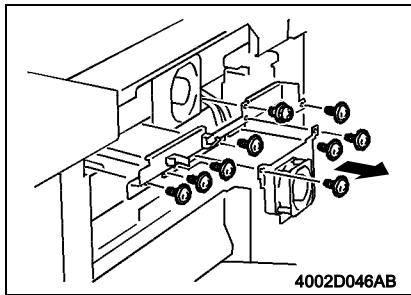


4. Remove three screws and the cover.

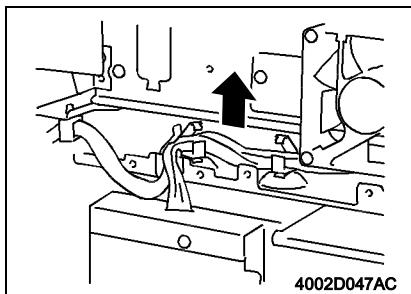


5. Unplug two connectors, two flat cables.
6. Remove the harness from the edge cover.

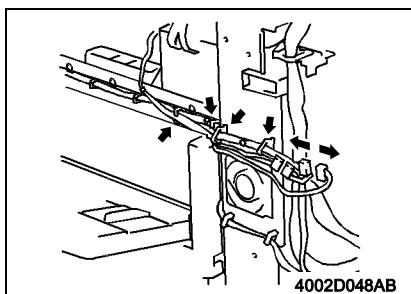




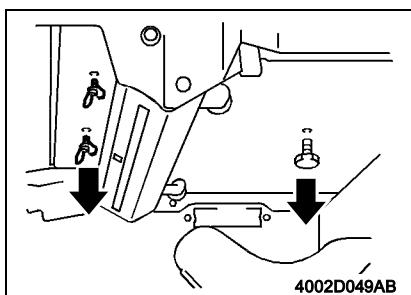
7. Remove three screws and the PH Cooling Fan Motor mounting bracket Assy.
8. Remove six screws and the mounting bracket.



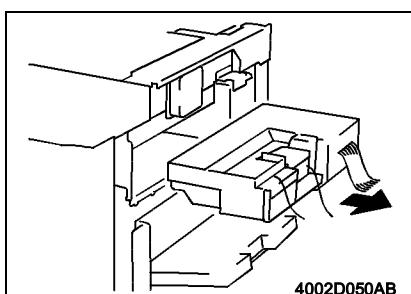
9. Remove the harness from two cord clamps and one edge cover.



10. Unplug two relay connectors and remove the harness from the cord clamp.

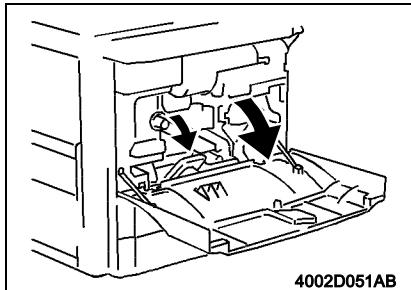


11. Swing down the Front Door and slide out the Developer Unit.
12. Remove two thumbscrews and one bolt.

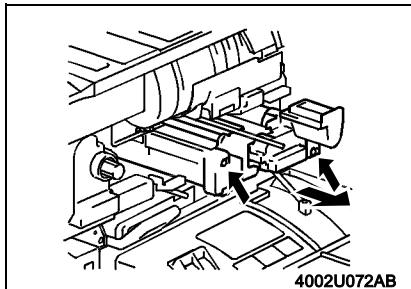


13. Remove the PH Unit.

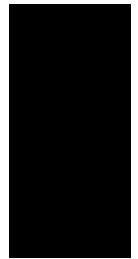
## (5) Removal of the Developing Unit



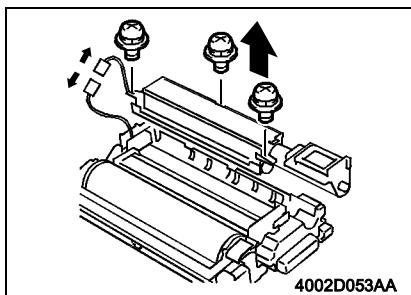
1. Swing down the Front Door.
2. Swing down the Transport Section Release Lever.



3. Loosen two screws and remove the Developing Unit.

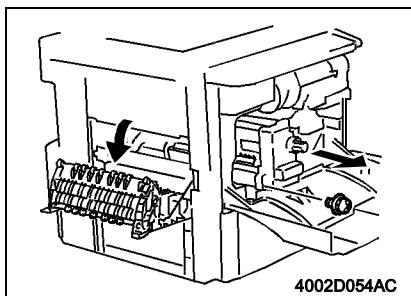


## (6) Removal of the Sub Hopper Unit



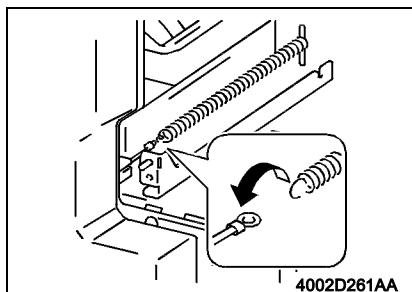
1. Swing down the Front Door and slide out the Developing Unit.
2. Unplug one connector and remove three screws and the Sub Hopper Unit.

## (7) Removal of the Fusing Unit

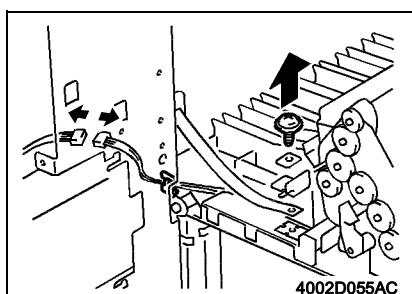


1. Open the Left Door.
2. Swing Down the Front Door.
3. Remove one screw and slide out the Fusing Unit.

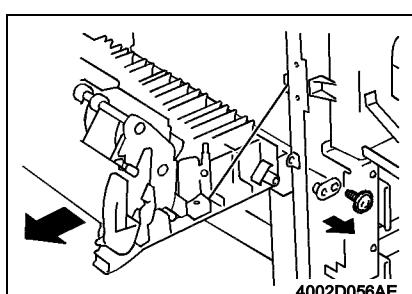
**(8) Removal of the Upper Left Door (Exit/Duplex Switching Unit)**



1. Swing down the Front Cover and slide out the Fusing Unit.
2. Remove the cable from the spring.



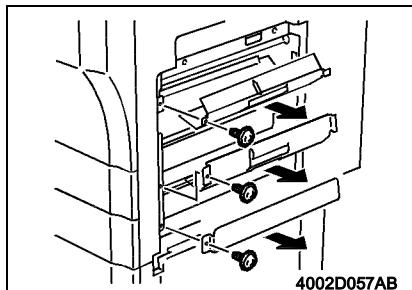
3. Remove the Rear Cover.
4. Open the Upper Left Door.
5. Remove the Left Cover.
6. Unplug one connector and remove the harness from the edge cover.
7. Remove one screw, holding bracket, and the belt.



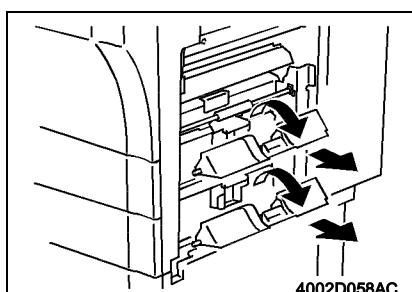
8. Remove one screw and the holding bracket.
9. Remove the Upper Left Door.

## 2-5. PAPER TAKE-UP/TRANSPORT SECTION

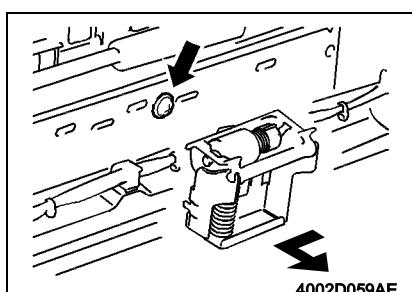
### (1) Removal of the Paper Take-Up Roll, Paper Feed Roll and Paper Separator Roll Assy.



1. Remove the Right Door.
2. Remove one screw and the Paper Guide Plate from each drawer.

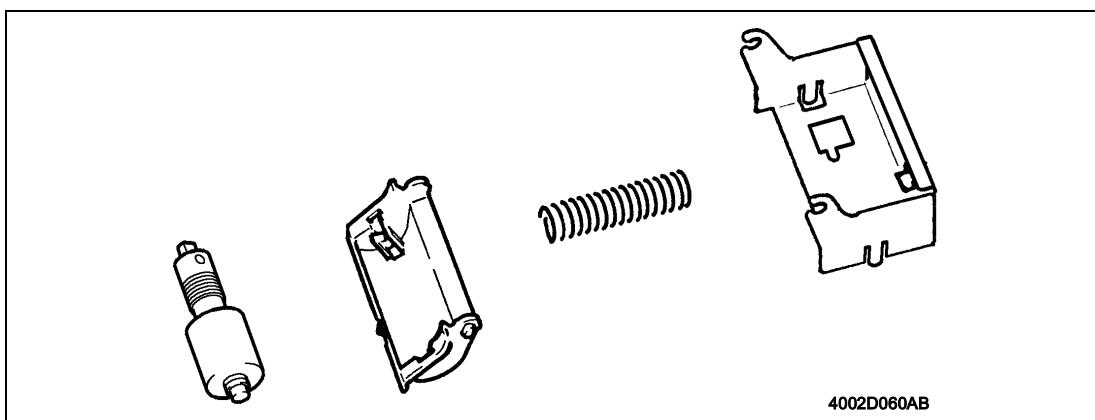


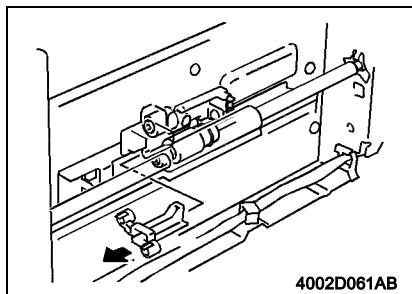
3. Remove the Paper Separator Roll/Paper Guide Plate Assy. by turning it about 90 in the direction of the arrow.



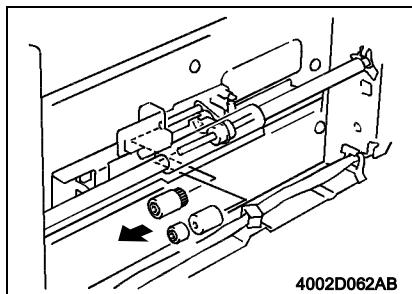
4. Loosen one screw and remove the Paper Separator Roll Mounting Bracket Assy.

5. Disassemble the Paper Separator Roll Assy.



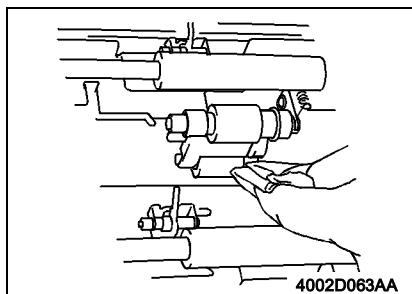


6. Unbending one tab of the holder, remove the holder.



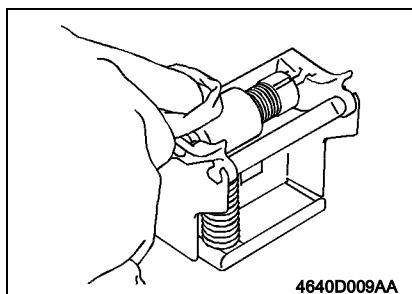
7. Remove the Paper Take-Up Roll and Paper Feed Roll.

## (2) Cleaning of the Paper Take-Up Roll and Paper Feed Roll



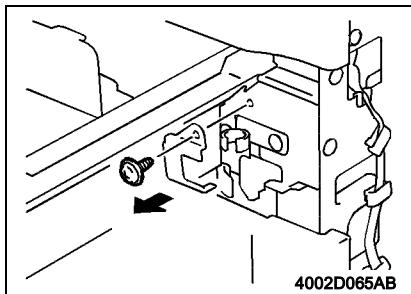
1. Remove the Paper Separator Roll Mounting Bracket Assy.
2. Using a soft cloth dampened with alcohol, wipe each roll clean of dirt.

## (3) Cleaning of the Paper Separator Roll

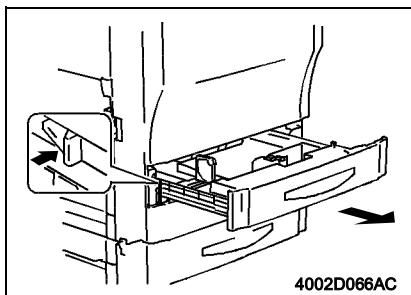


1. Remove the Paper Separator Roll Mounting Bracket Assy.
2. Using a soft cloth dampened with alcohol, clean the Paper Separator Roll.

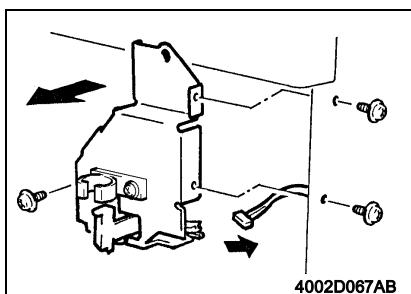
#### (4) Removal of the Drawer Lift-Up Motor



1. Remove the Right Door.
2. Slide out the drawer and remove one screw and the right stopper.



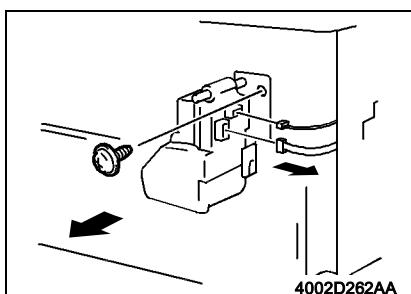
3. Pushing the tab on the left rail, pull out the drawer.



4. Remove three screws and the Drawer Set Sensor Mounting Bracket Assy.
5. Unplug one connector.

**NOTE**

*Reinstall the Drawer Set Sensor Mounting Bracket as you hold the lever.*

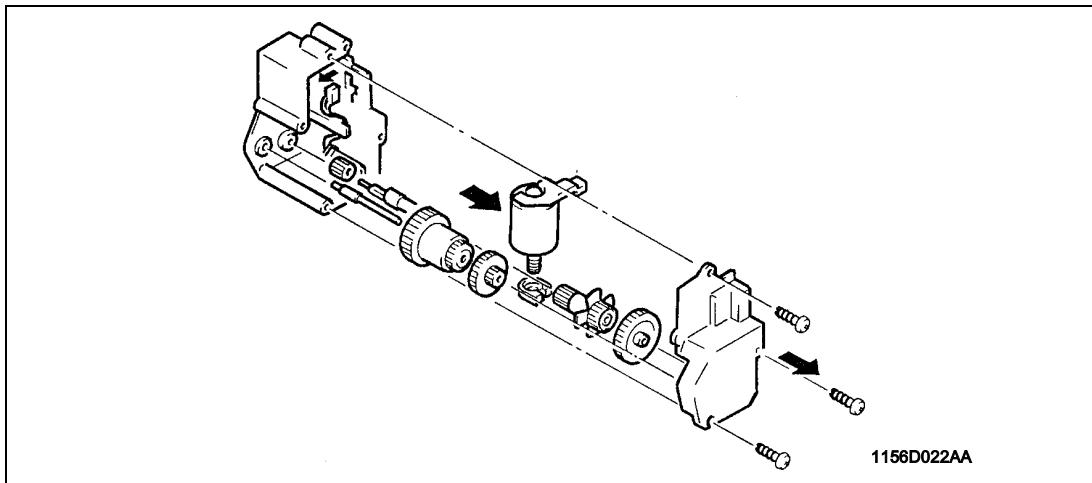


6. Unplug two connectors.
7. Remove one screw and the Drawer Lift-Up Unit.

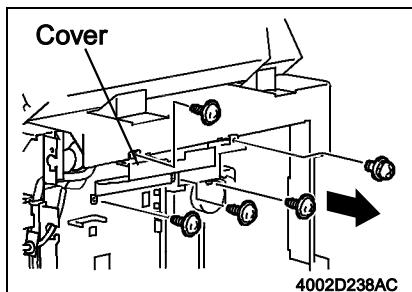
**NOTE**

*When reinstalling the Drawer Lift-Up Unit, make sure that the mounting bracket is properly aligned with the positioning dowel pin on the copier.*

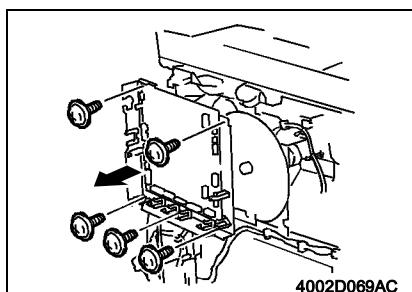
8. Disassemble the Drawer Lift-Up Unit.



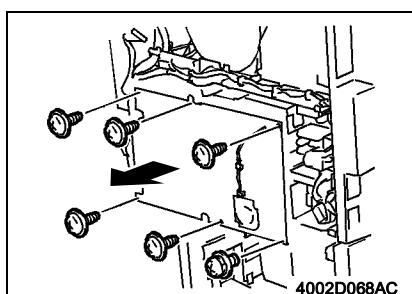
**(5) Removal of the Upper and Lower Transport Rollers**



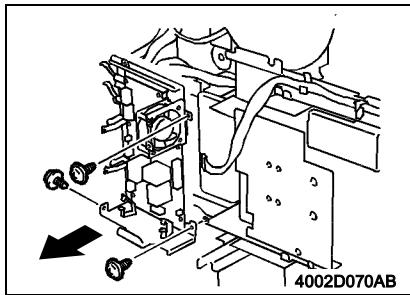
1. Swing down the Front Door and slide out the Developing Unit.
2. Slide out the 1st Drawer.
3. Remove the Rear Cover.
4. Remove the Right Cover.
5. Remove five screws and the Cover.



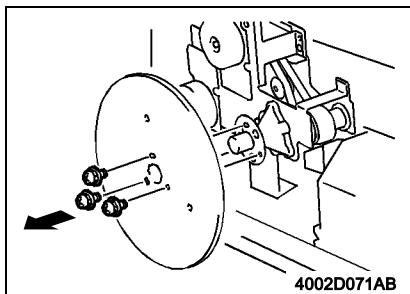
6. Remove five screws and the Master Board Mounting Bracket Assy.



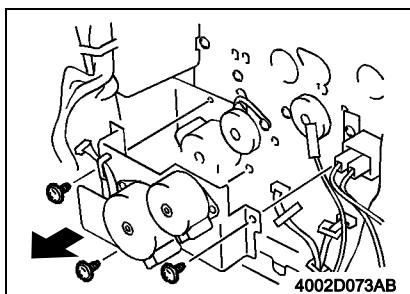
7. Remove six screws and the board cover.



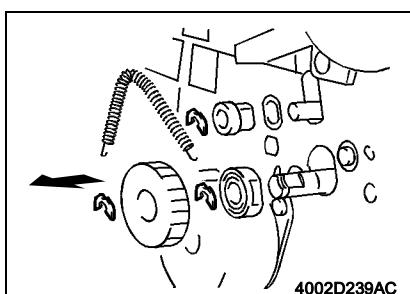
8. Remove three screws and the Power Supply Board Mounting Bracket Assy.



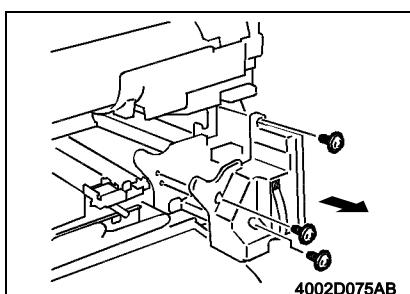
9. Remove three screws and the Flywheel.



10. Remove three screws and the Transport/Synchronizing Rollers Drive Assy.



11. Snap off the E-ring and remove the gear.
12. Unhook one spring and snap off one E-ring. Then remove the bushing from the rear end of the Upper Transport Roller.
13. Snap off one E-ring and remove the bearing from the rear end of the Lower Transport Roller.



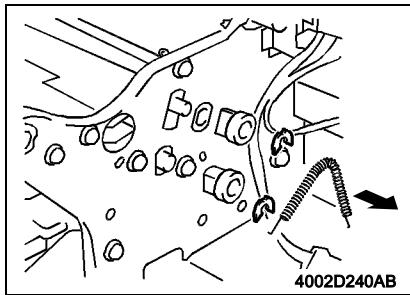
14. Remove three screws and the Cover.

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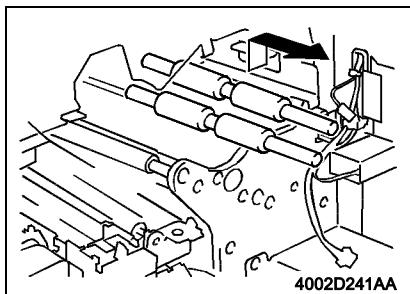
**NOTE**

*Do not remove the belt mounting screw on the cover.*

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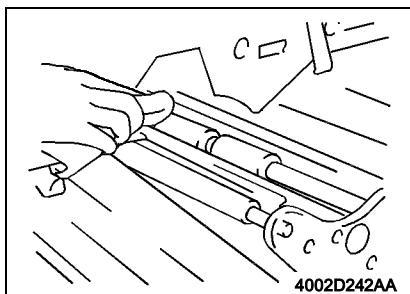


15. Unhook one spring and snap off two E-rings. Then remove the bushings from the front end of the Upper and Lower Transport Roller.



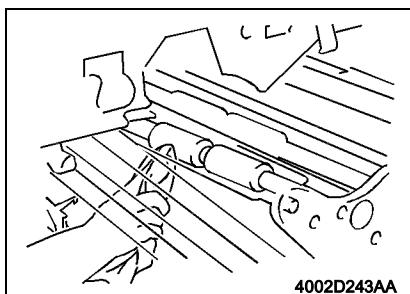
16. Remove the Upper Transport Roller.
17. Remove the Lower Transport Roller.

#### (6) Cleaning of the Upper Transport Roller



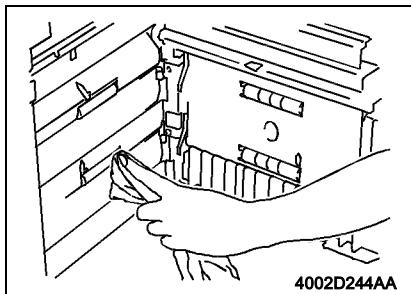
1. Swing down the Front Door and slide out the Developing Unit.
2. Using a soft cloth dampened with alcohol, clean the Upper Transport Roller.

#### (7) Cleaning of the Lower Transport Roller



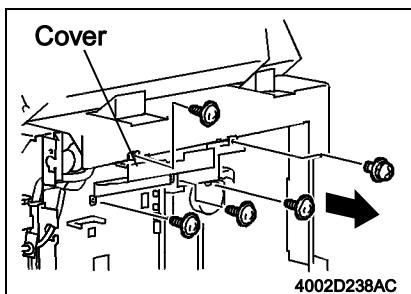
1. Swing down the Front Door and slide out the Developing Unit.
2. Using a soft cloth dampened with alcohol, clean the Lower Transport Roller.

## (8) Cleaning of the Vertical Transport Rollers

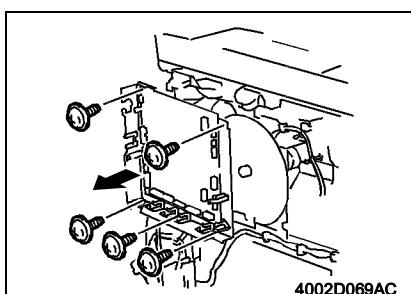


1. Open the Upper Right Door.
2. Using a soft cloth dampened with alcohol, wipe each roller clean of dirt.

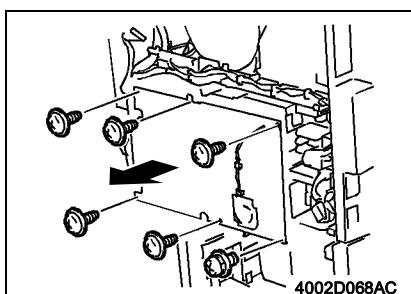
## (9) Removal of the Synchronizing Roller



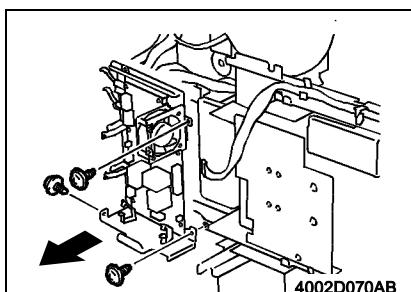
1. Swing down the Front Door and slide out the Developing Unit.
2. Remove the Rear Cover.
3. Remove the Right Cover.
4. Remove five screws and the Cover.



5. Remove five screws and the Master Board Mounting Bracket Assy.

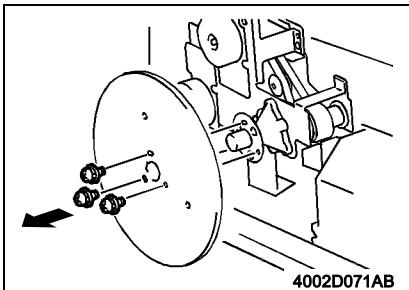


6. Remove six screws and the board cover.

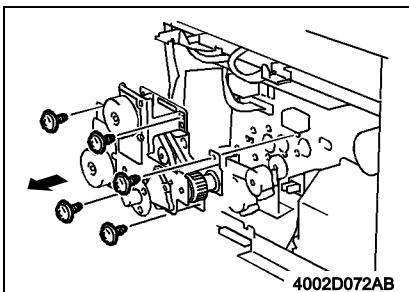


7. Remove three screws and the Power Supply Board Mounting Bracket Assy.

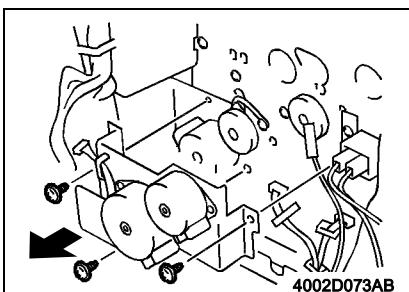
8. Remove three screws and the Flywheel.



9. Unplug two connectors and remove five screws and the Developing Unit Drive Assy.

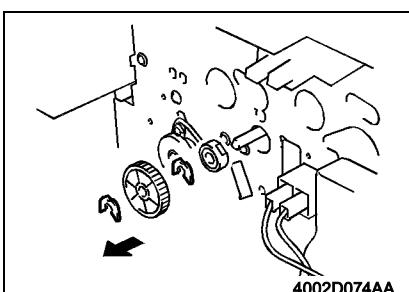


10. Unplug two connectors and remove three screws and the Transport/Synchronizing Rollers Drive Assy.



11. Snap off the E-ring and remove the gear.

12. Snap off one E-ring and remove the bushing from the rear end of the Upper Synchronizing Roller.



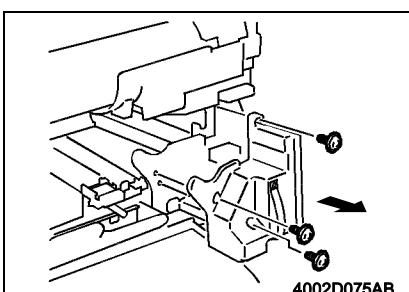
13. Remove three screws and the Cover.

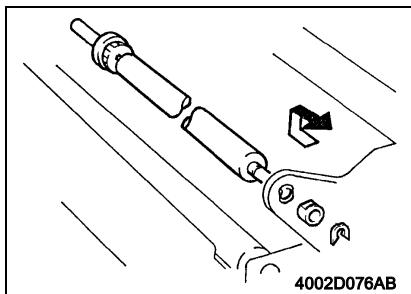
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**NOTE**

*Do not remove the belt mounting screw on the cover.*

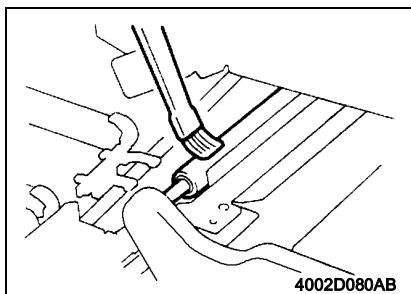
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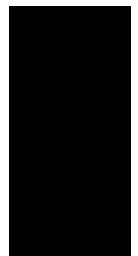


14. Snap off the E-ring and remove the bushing from the front end of the Upper Synchronizing Roller.
15. Remove the Upper Synchronizing Roller.

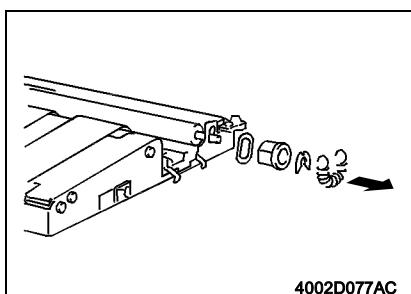
#### (10) Cleaning of the Upper Synchronizing Roller



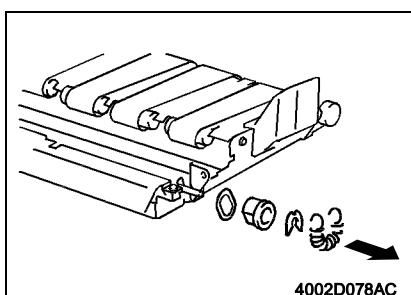
1. Swing down the Front Door and slide out the Developing Unit.
2. Using a brush or a vacuum cleaner, clean the Upper Synchronizing Roller.



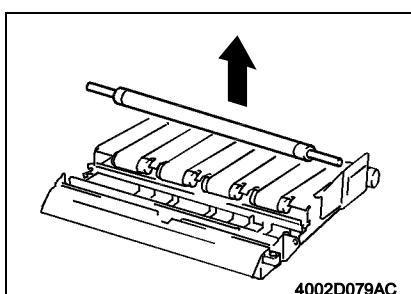
#### (11) Removal of the Lower Synchronizing Roller



1. Remove the Suction Unit.
2. Unhook the spring, snap off the E-ring, and remove the bushing from the front end of the Lower Synchronizing Roller.

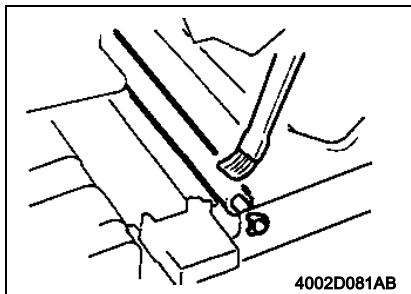


3. Unhook the spring, snap off the E-ring, and remove the gear and bushing from the rear end of the Lower Synchronizing Roller.



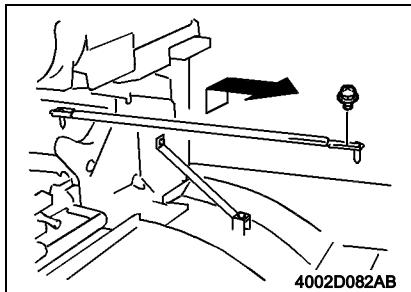
4. Remove the Lower Synchronizing Roller.

## (12) Cleaning of the Lower Synchronizing Roller

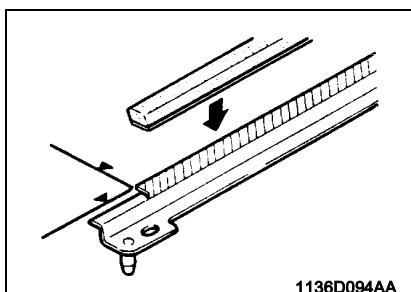


1. Swing down the Transport Section Release Lever.
2. Using a brush or a vacuum cleaner, clean the Lower Synchronizing Roller.

## (13) Removal of the Synchronizing Paper Dust Remover



1. Swing down the Front Door and slide out the Developing Unit.
2. Remove one screw and the Synchronizing Paper Dust Remover Assy.



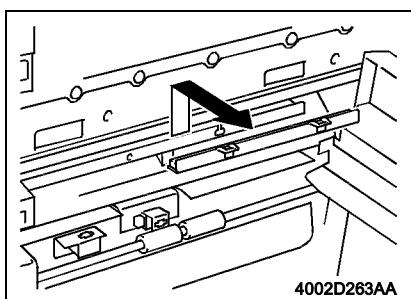
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**NOTE**

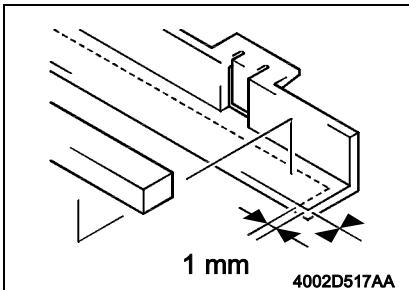
*When only the Paper Dust Remover is to be replaced, affix the new one along the reference line as shown on the left.*

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## (14) Removal of the Transport Paper Dust Remover



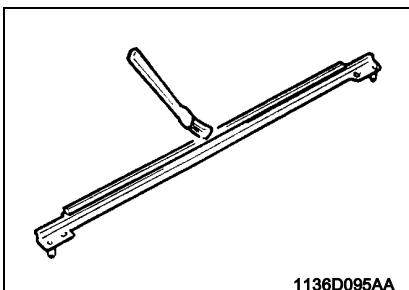
1. Open the Upper Right Door.
2. Remove the Transport Paper Dust Remover Assy.



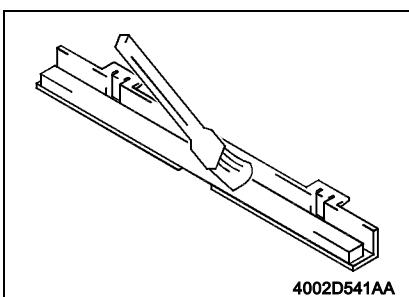
**NOTE**

*When only the Paper Dust Remover is to be replaced, affix the new one along the reference line as shown on the left.*

**(15) Cleaning of the Paper Dust Remover**

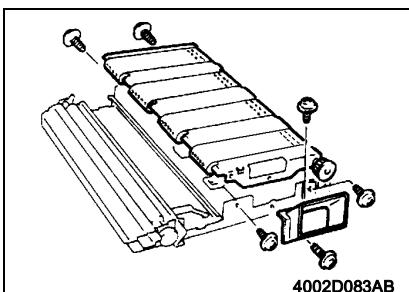


1. Remove the Synchronizing Paper Dust Remover Assy.
2. Using a brush, whisk dust off the Synchronizing Paper Dust Remover.



1. Remove the Transport Paper Dust Remover Assy.
2. Using a brush, whisk dust off the Transport Paper Dust Remover.

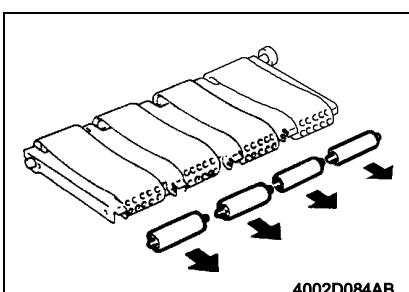
**(16) Disassembly of the Suction Unit**



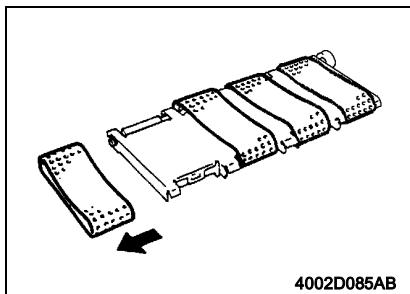
1. Remove the Suction Unit.
2. Remove two screws and the duct.
3. Remove four screws and the Suction Drive Unit.

**NOTE**

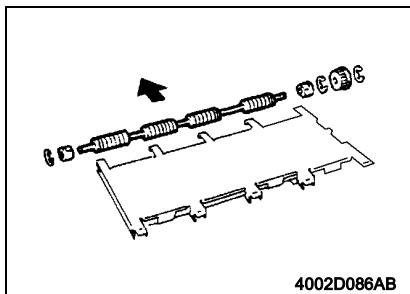
*When reinstalling the Suction Drive Unit, try to press it down against the Suction Base Plate.*



4. Remove four driven rolls.

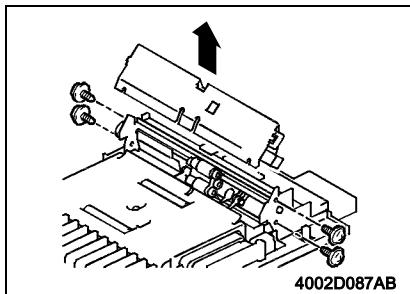


5. Remove four Suction Belts.

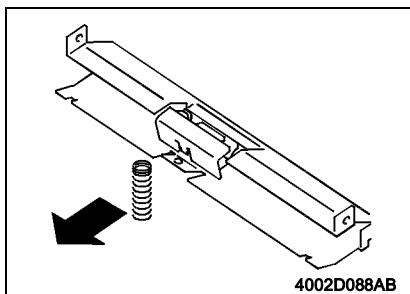


6. Remove the Suction Roller as shown on the left.

#### (17) Disassembly of the Multi Bypass Unit



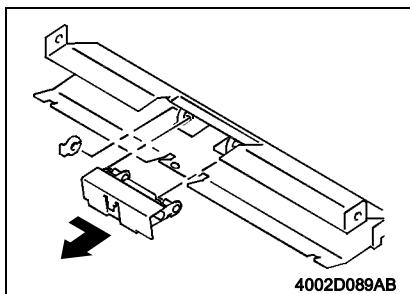
1. Remove the Right Door.
2. Remove four screws and the Separator Guide Plate Assy.



3. Remove the Spring.

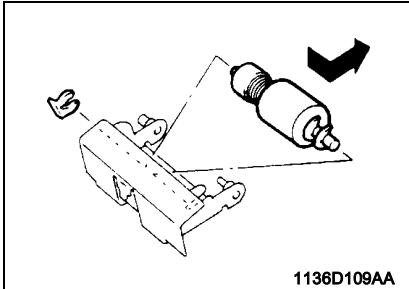
**NOTE**

*When reinstalling the Spring, place it so that its close-coiled end faces the Separator Unit.*



4. Snap off the C-clip and remove the Separator Assy.

5. Snap off the C-clip and remove the Separator Roll Assy.

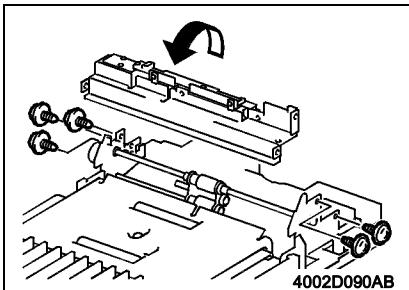


6. Remove five screws and the Solenoid Mounting Bracket Assy.

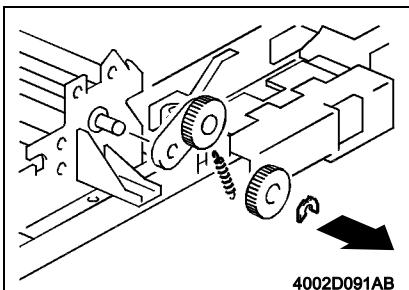
**NOTE**

*Whenever a solenoid has been replaced or a solenoid mounting screw removed, be sure to adjust the position of the solenoid.*

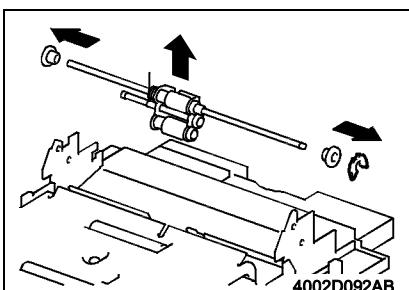
☞ D-78



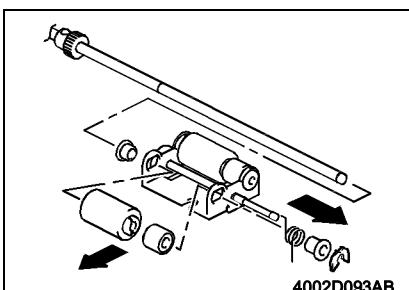
7. Snap off the E-ring and remove the gear.
8. Unhook the spring and remove the gear assy.

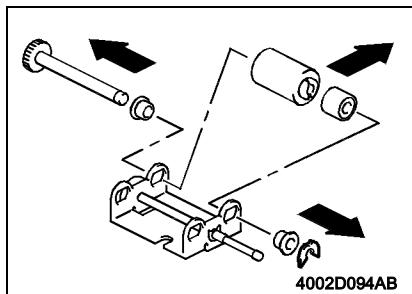


9. Snap off the E-ring and remove the Paper Take-Up Roll Assy.



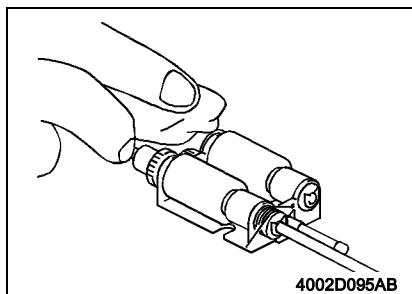
10. Snap off the E-ring and remove the Paper Feed Roll.





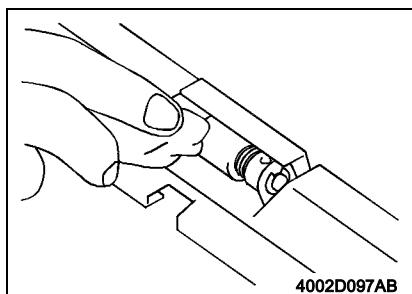
11. Snap off the E-ring and remove the Paper Take-Up Roll.

**(18) Cleaning of the Multi Bypass Paper Take-Up Roll/Paper Feed Roll**



1. Using a soft cloth dampened with alcohol, clean the Paper Take-Up Roll/Paper Feed Roll.

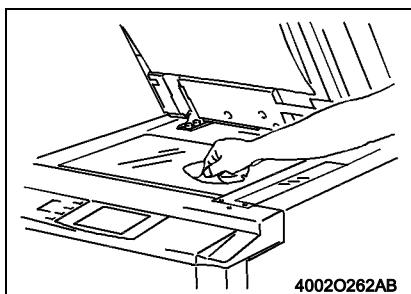
**(19) Cleaning of the Multi Bypass Paper Separator Roll Assy.**



1. Using a soft cloth dampened with alcohol, clean the Paper Separator Roll Assy.

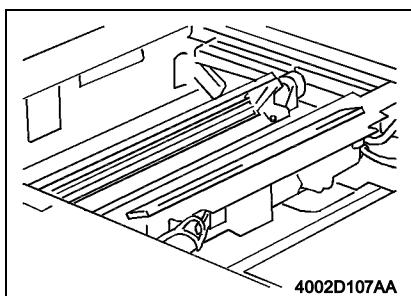
## 2-6. OPTICAL SECTION

### (1) Cleaning of the Original Glass and EDH Glass

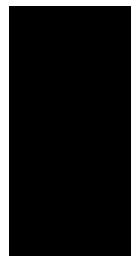


1. Wipe clean the Original Glass and EDH Glass with a soft cloth.

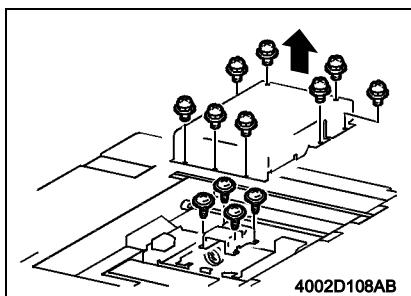
### (2) Cleaning of the Mirrors



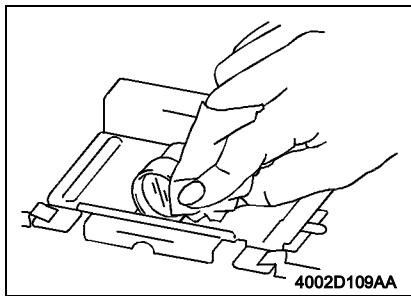
1. Remove the Original Glass.
2. Wipe the surface of each mirror clean of dirt using a soft cloth.



### (3) Cleaning of the Lens

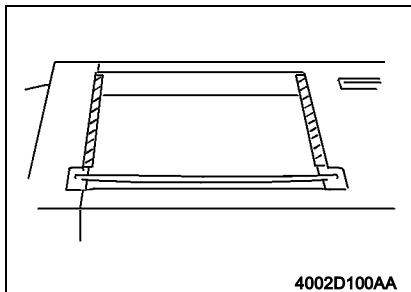


1. Remove the Original Glass and EDH Glass.
2. Remove eight screws and the CCD Unit Cover.
3. Remove four screws and the Lens Cover.



4. Wipe clean the Lens with a soft cloth.

#### (4) Cleaning of the Scanner Rails/bushings



1. Remove the Original Glass.
2. Wipe clean the Scanner Rails/bushings with a soft cloth.

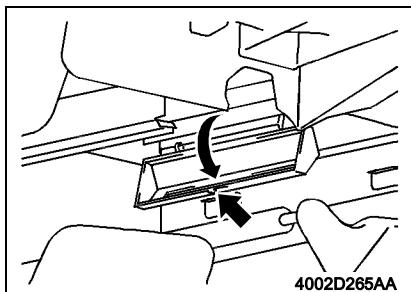
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##### **NOTE**

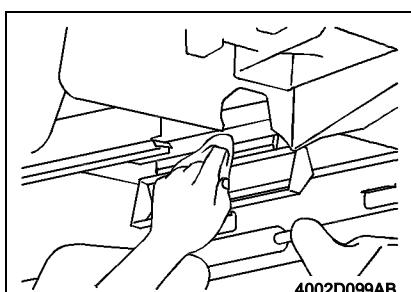
*Apply lubricant to the Scanner Rails/Bushings after they have been cleaned.*

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#### (5) Cleaning of the PH Glass

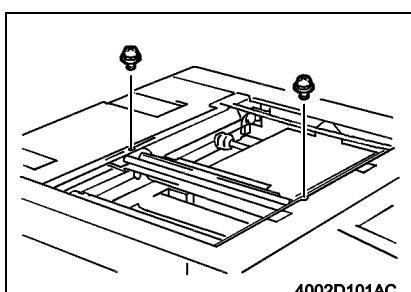


1. Swing down the Front Door and slide out the Developing Unit.
2. Open the cover.

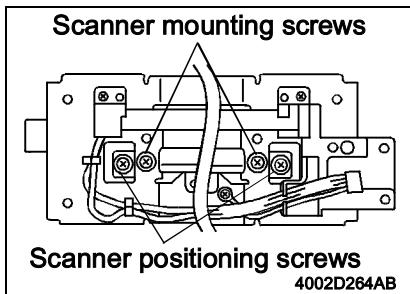


3. Wipe clean the PH Glass with a soft cloth.

#### (6) Removal of the Scanner

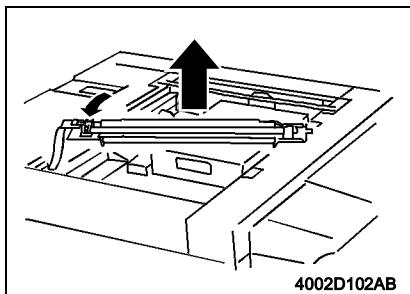


1. Remove the Original Glass.
2. Slide the Scanner to the position shown.
3. Remove the two Scanner mounting screws at the front and rear.



**NOTE**

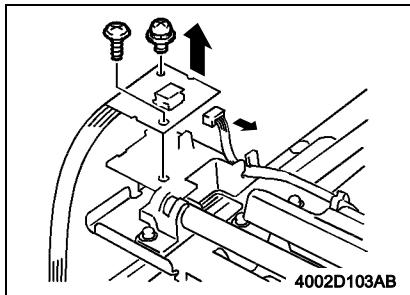
*Do not remove the Scanner positioning screws.*



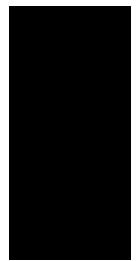
4. Swing the Scanner counterclockwise and take it out of the copier.

**NOTE**

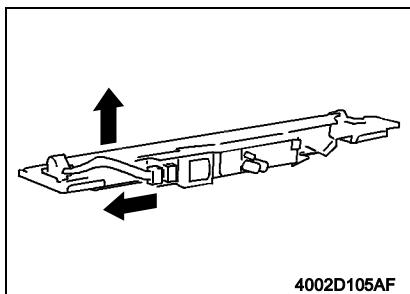
*At this point, the Scanner is kept connected to a flat cable and cannot be taken off.*



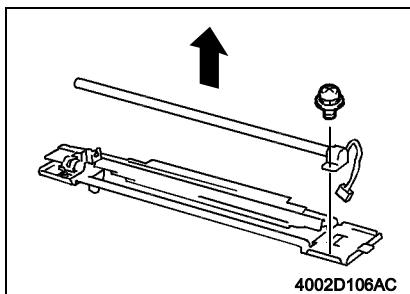
5. Unplug one connector.
6. Remove two screws and the flat cable board.
7. Remove the Scanner.



## (7) Removal of the Exposure Lamp

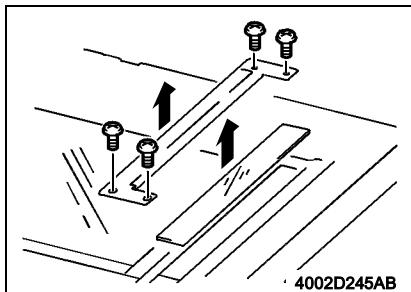


1. Remove the Scanner.
2. Unplug one connector from the Inverter Board.
3. Remove the harnesses from the corresponding wiring saddles.



4. Remove one screw and the Exposure Lamp.

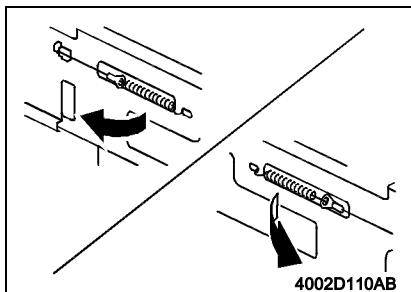
## (8) Removal of the EDH Glass



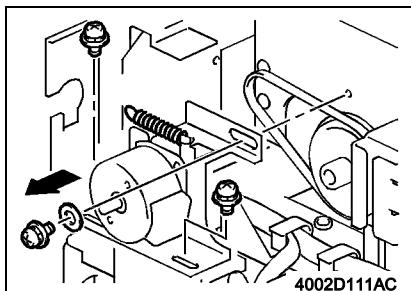
1. Remove four screws and the EDH Glass Holder.
2. Remove the EDH Glass.

## (9) Removal of the Scanner Drive Cable

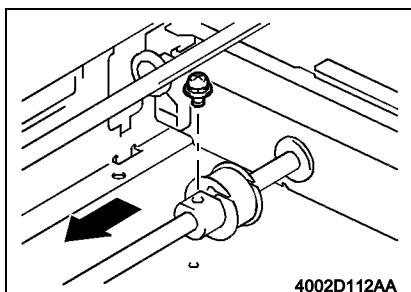
1. Remove the Original Glass and EDH Glass.
2. Remove the Left Cover, Right Cover, Rear Upper Cover and Control Panel.
3. Remove the CCD Unit Cover.
4. Remove the Scanner.



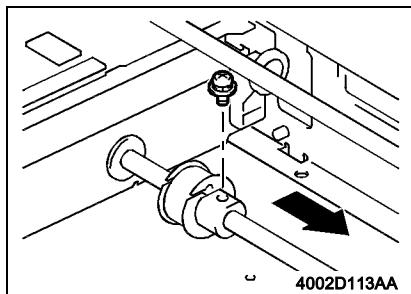
5. Unhook the springs of the Scanner Drive Cables on the hook side, one each at the front and in the rear.
6. Remove the front and rear Scanner Drive Cables.



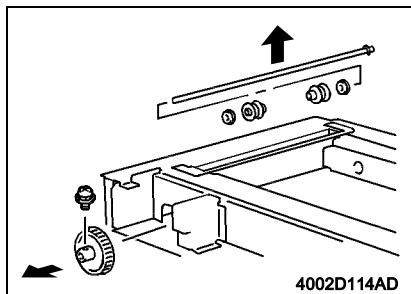
7. Remove three screws and the Scanner Motor Mounting Bracket Assy.



8. Remove one screw and then slide the front pulley and bushing toward the rear.

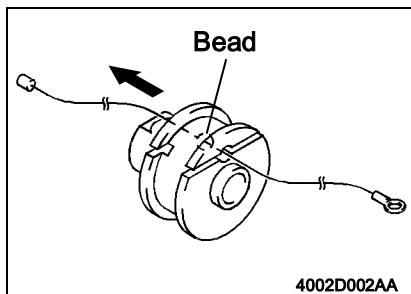
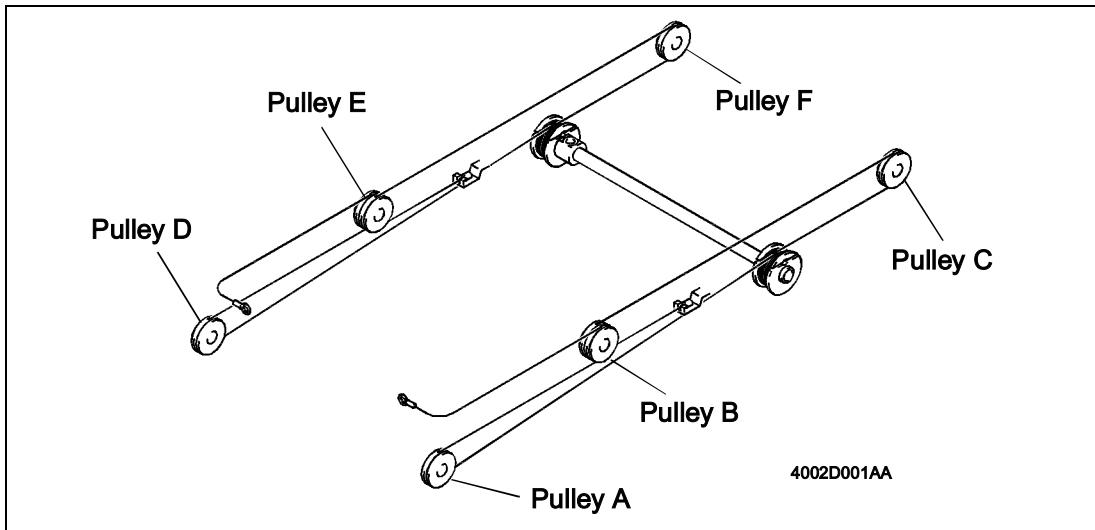


9. Remove one screw and the slide the rear pulley and bushing toward the front.



10. Remove the Scanner Drive Gear, pulleys and bushings at the front and rear, and the shaft.

#### (10) Winding of the Scanner Drive Cable

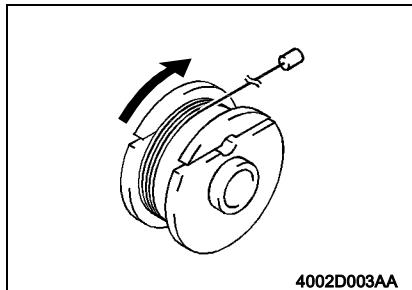


- Front**
1. Position the round bead of the Scanner Drive Cable in the pulley as shown.

**NOTE**

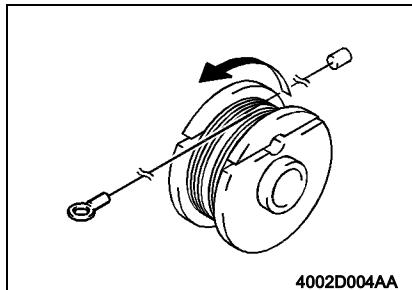
*Make sure that the bead snugly rests in the slit in the pulley.*

- Wind the fixed bead end of the cable around the pulley five turns clockwise, from the rear toward the front side.



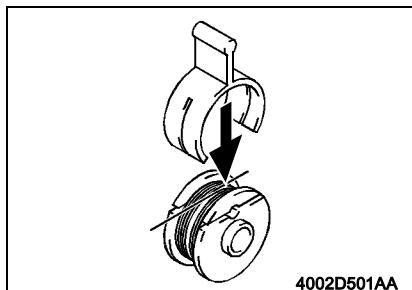
4002D003AA

- Wind the hook end of the cable around the pulley five turns counterclockwise, from the front toward the rear side.



4002D004AA

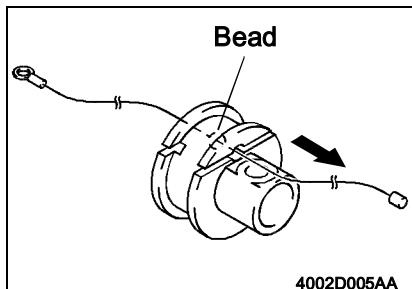
- Slip the Cable Holding Jig onto the pulley to secure the cable in position.



4002D501AA

**Rear**

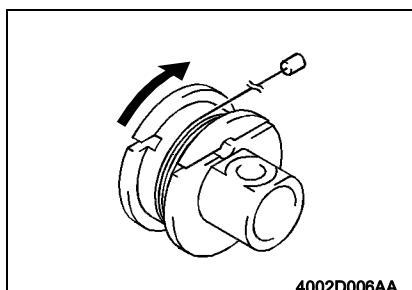
- Position the round bead of the Scanner Drive Cable in the pulley as shown.



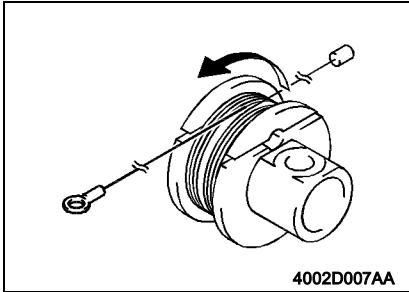
4002D005AA

- NOTE**  
Make sure that the bead snugly rests in the slit in the pulley.

- Wind the fixed bead end of the cable around the pulley five turns clockwise, from the front toward the rear side.

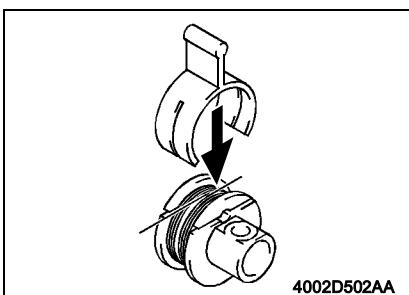


4002D006AA

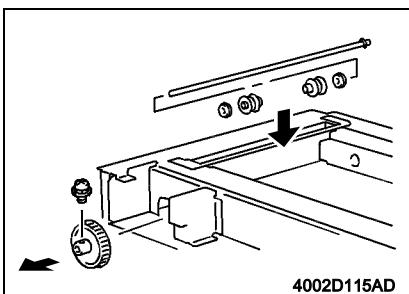
- 
7. Wind the hook end of the cable around the pulley five turns counterclockwise, from the rear toward the front side.

**NOTE**

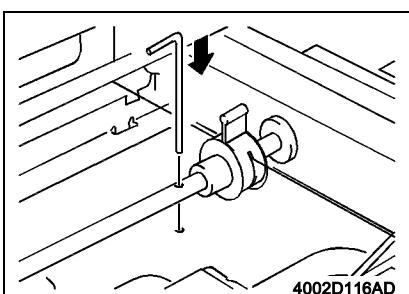
*Make sure that no part of the cable rides on the other.*



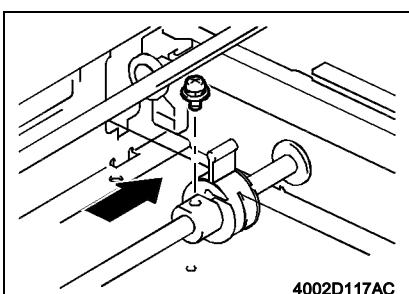
8. Slip the Cable Holding Jig onto the pulley to secure the cable in position.



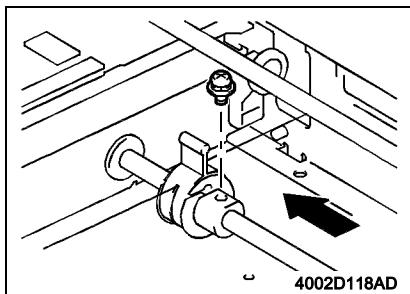
9. Mount the front and rear pulleys and bushings on the shaft and install the shaft to the IR Unit.  
10. Mount the Scanner Drive Gear on the shaft and secure it in position with one screw.



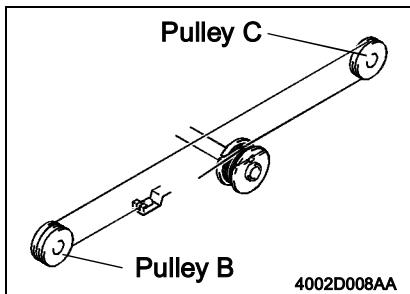
11. Install an Allen wrench into the holes in the shaft and the IR Base Plate.



12. Slide the front pulley and bushing to the front and install one mounting screw.

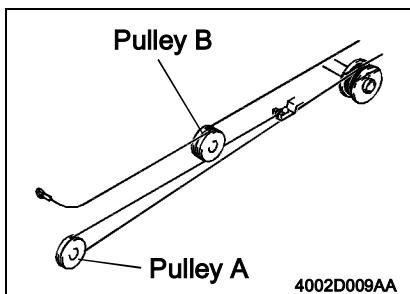


13. Slide the rear pulley and bushing to the rear and secure install one mounting screw.

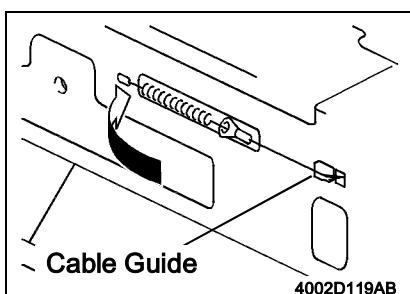


Front

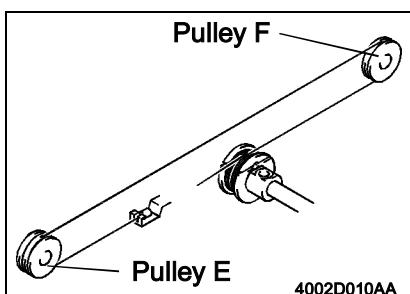
14. Wind the bead end of the cable around pulley C and pulley B, then hook the bead onto the Adjustable Anchor.



15. Wind the hook end of the cable around pulley A and pulley B.

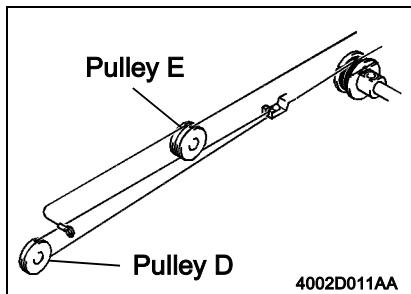


16. Fit the hook end of the cable into the groove in the Cable Guide and hook the spring.

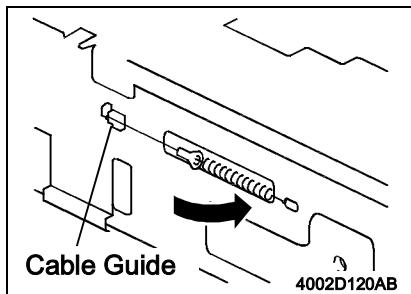


Rear

17. Wind the bead end of the cable around pulley F and pulley E, then hook the bead onto the Adjustable Anchor.



18. Wind the hook end of the cable around pulley D and pulley E.



19. Fit the hook end of the cable into the groove in the Cable Guide and hook the spring.

20. Mount the Scanner Motor Mounting Bracket Assy.  
21. Remove the Cable Holding Jigs from the front and rear pulleys.  
22. Remove the Allen wrench.  
23. Mount the Scanner.  
24. Reinstall the Left Cover, Right Cover, Rear Upper Cover and Control Panel.  
25. Reinstall the Original Glass and EDH Glass.  
26. Adjust the position of the Scanner and 2nd/3rd Mirrors Carriage.

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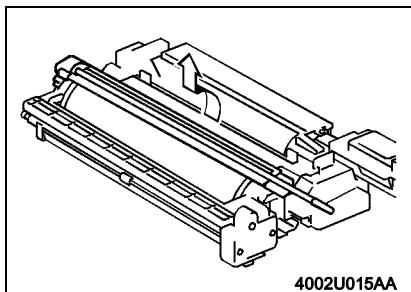
**NOTE**

*Whenever the Scanner Drive Cables have been removed, be sure to carry out the following check and adjustment: Orig. Size Adjust and Registration (CD).*

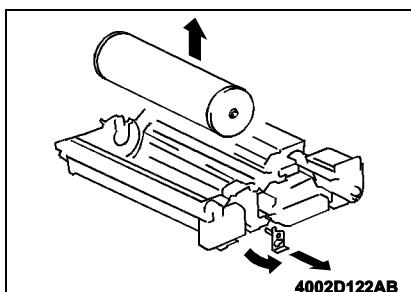
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## 2-7. DEVELOPING UNIT

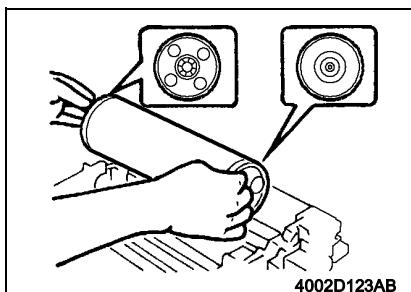
### (1) Remove of the Developing Unit



1. Swing down the Front Door and slide out the Developing Unit.
2. Move the PC Drum Charge Corona to the rear, raise it, and take it off.

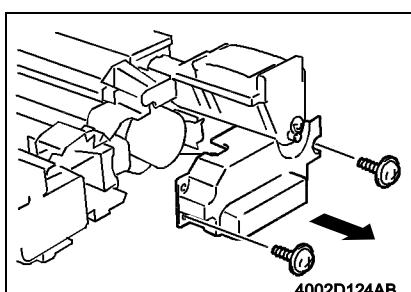


3. Loosen the two screws of the PC Drum stopper and remove the PC Drum stopper.
4. Remove the PC Drum.

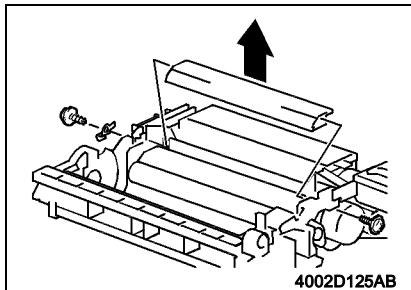


#### NOTES

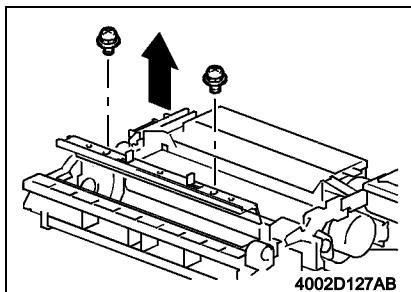
- When reinstalling the PC Drum, refer to the illustration on the left and make sure of the correct direction of installation. Be also sure to hold the PC Drum on both sides with care not to touch the surface of the drum with bare hands.
- When the PC Drum has been replaced, clear the counts of "PC Drum 1", "PC Drum 2" and "PC Drum 3" of "PM" of "Counter" available from the Tech. Rep. mode.



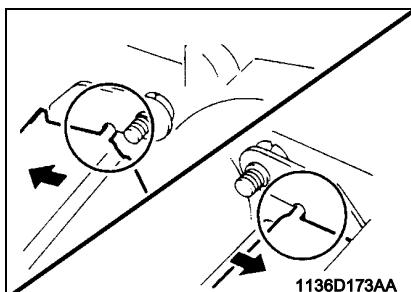
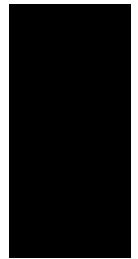
5. Remove two screws and the Developing Unit Front Cover.



6. Remove two screws and the Stopper and Developer Scattering Prevention Plate.

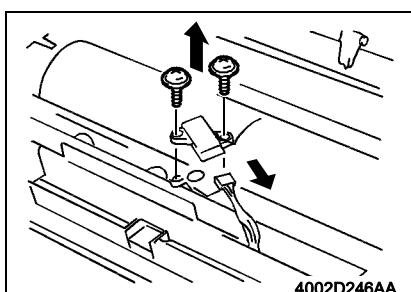


7. Remove two screws and the Cleaning Blade.

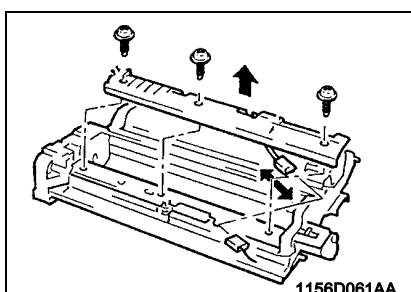


**NOTE**

*When reinstalling the Cleaning Blade, press the blade tightly up against the mounting bracket.*

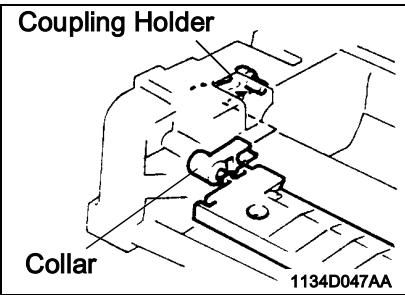


8. Remove two screws, unplug one connector, and remove the ATDC Sensor.



9. Unplug one connector.

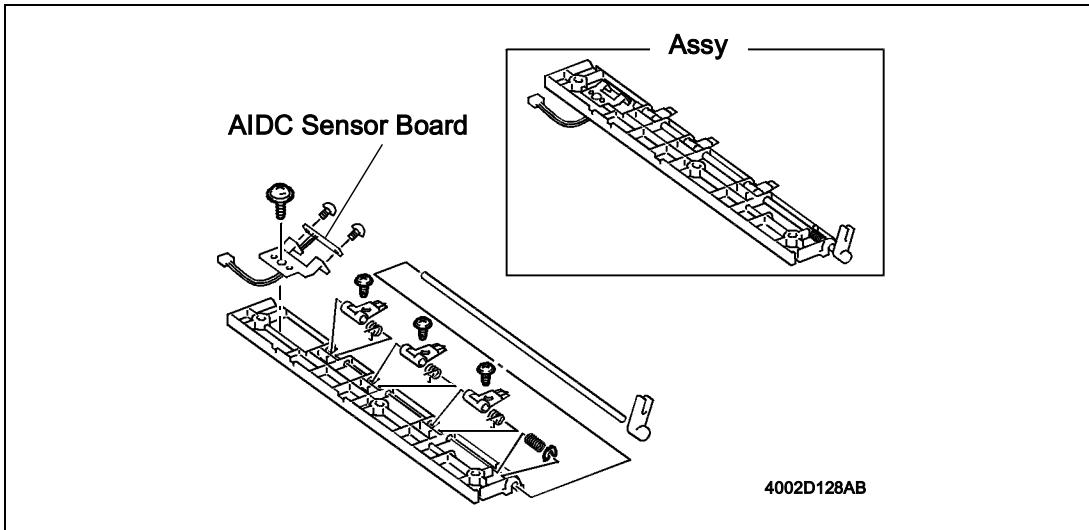
10. Remove three screws and the PC Drum Paper Finger Holder Assy.



**NOTE**

*When reinstalling the PC Drum Paper Separator Finger Holder Assy., fit the collar of the assy onto the coupling holder in the rear.*

11. Remove the PC Drum Paper Fingers and AIDC Sensor Board as shown below.

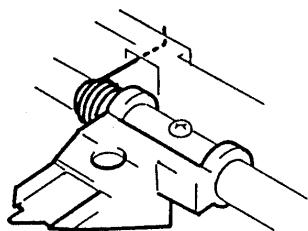


**NOTES**

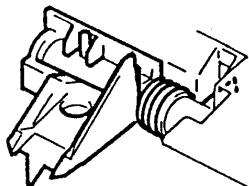
- At removal and reinstallation, use care not to damage the tip of the fingers.  
Also, use care not to get hurt by the tip of the fingers.
- After reinstallation, perform the following adjustment procedure: Positioning of the PC Drum Paper Separator Fingers.

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**PC Drum Paper Separator Finger Installed**



Top View

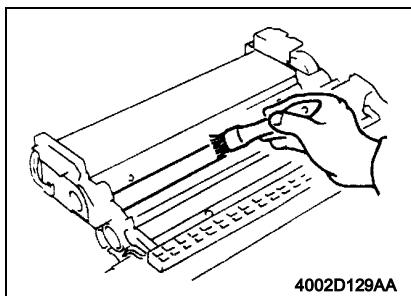


Rear View

Hook the spring properly.  
After installation, check that the  
Paper Separator Fingers operate  
smoothly.

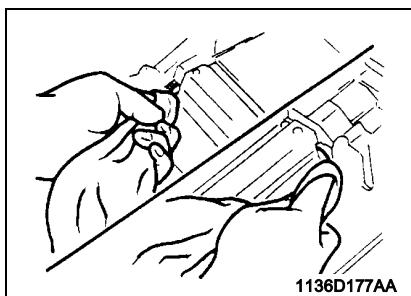
1156D063AA

## (2) Cleaning of the Developer Scattering Prevention Plate



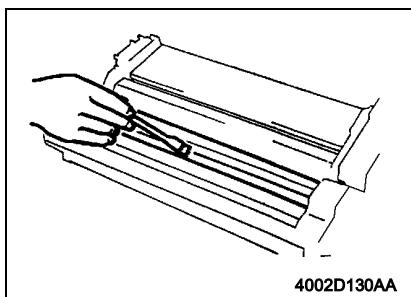
1. Using a brush, whisk dust off the Developer Scattering Prevention Plate.

## (3) Cleaning of the DS Positioning Collars



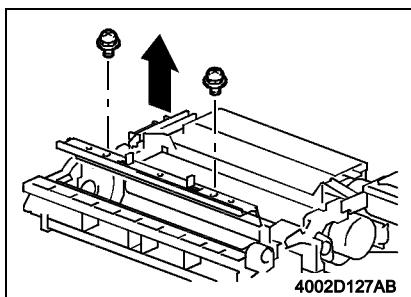
1. Using a brush or a soft cloth dampened with alcohol, clean the DS Positioning Collars.

## (4) Cleaning of the Toner Antisocial Trap



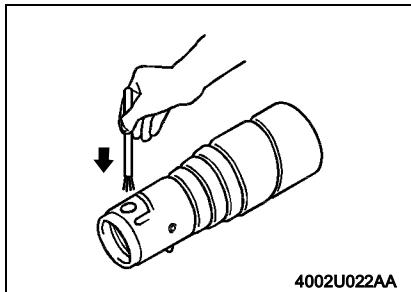
1. Using a brush or a soft cloth, clean the Toner Anti-spill Trap.

## (5) Replacement of the Cleaning Blade

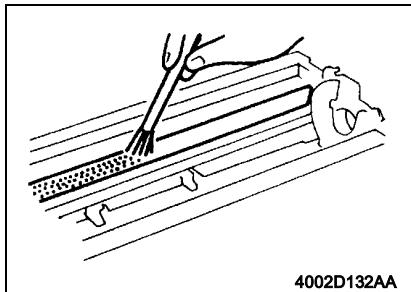


1. Remove two screws and the Cleaning Blade, and replace the Cleaning Blade with a new one.

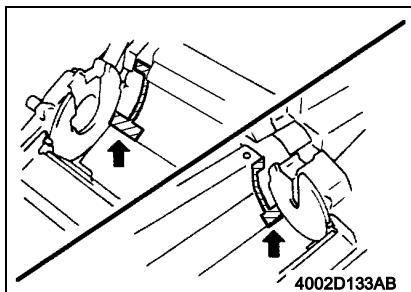
2. Remove the Toner Bottle from Main Hopper. Insert a brush through the toner port and into the toner.



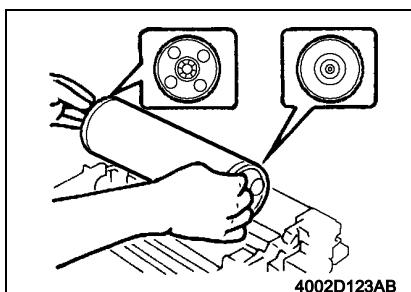
3. Apply toner to the entire surface of the new Cleaning Blade.



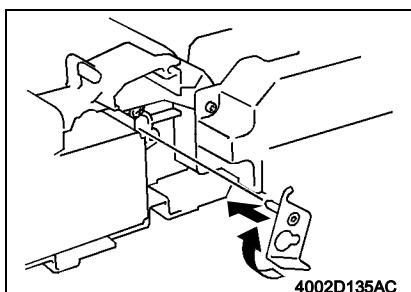
4. Using the brush, apply lubricant shipped with the Cleaning Blade to the two side seals shown.

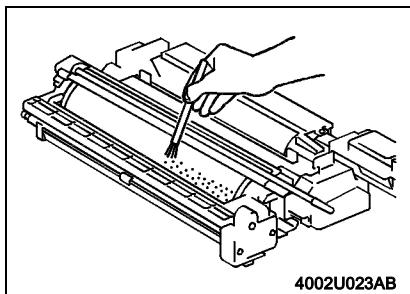


5. Install the PC Drum.

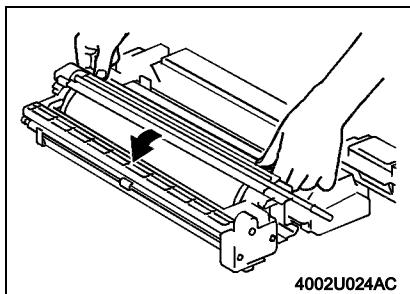


6. Fit the PC Drum stopper and tighten the screws.

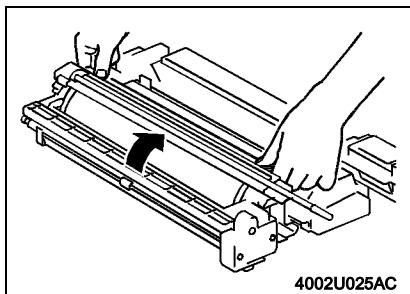




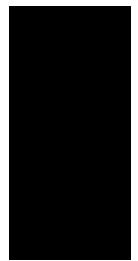
7. Apply a thin coat of toner to the surface of the PC Drum.



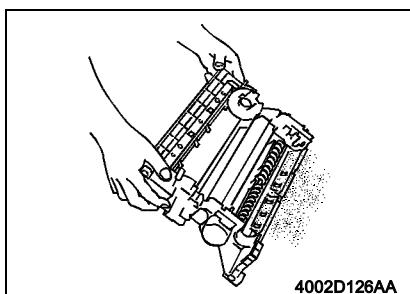
8. Holding onto the both sides of the PC Drum with hands, turn the PC Drum a half turn in the direction of the arrow.



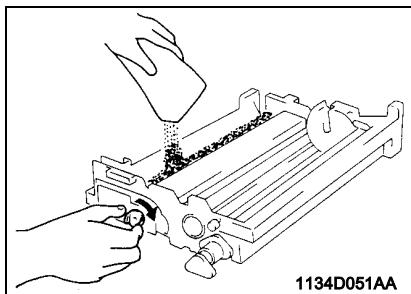
9. Holding onto the both sides of the PC Drum with hands, turn the PC Drum a half turn in the direction of the arrow.



## (6) Replacement of the Developer



1. Remove the Sub Hopper Unit.
2. Dump the developer out the Developing Unit.



3. Turning the Bucket Roller, pour fresh developer evenly into the chamber.

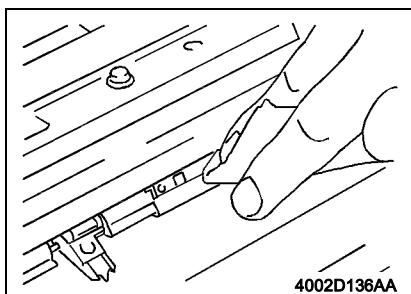
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**NOTES**

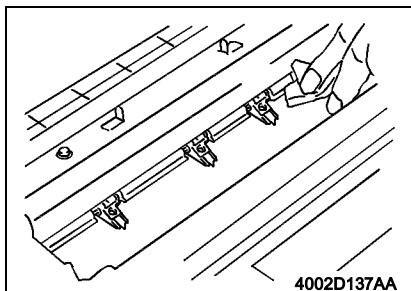
- Shake the packet of developer well before opening it.
- When the developer has been replaced, clear the counts of "Developer 1" and "Developer 2" of "PM" of "Counter" available from the Tech. Rep. mode and run the F8 ATDC Sensor operation.

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**(7) Cleaning of the AIDC Sensor Board**

1. Remove the PC Drum.
2. Using a brush or a soft cloth dampened with alcohol, clean the AIDC Sensor Board.

**(8) Cleaning of the PC Drum Paper Separator Fingers**

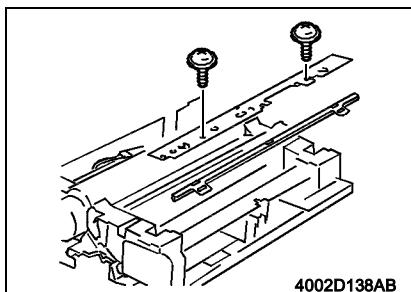
1. Remove the PC Drum.
2. Using a brush or a soft cloth dampened with alcohol, clean the PC Drum Paper Separator Fingers.

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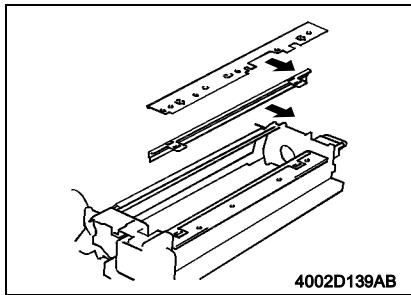
**NOTE**

*During the cleaning procedure, use care not to scratch, bend, or otherwise damage the tips of the PC Drum Paper Separator Fingers. Be also careful not to get hurt with the tips.*

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**(9) Removal of the Toner Antispill Seal**

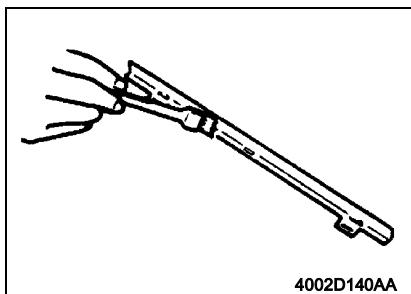
1. Remove the PC Drum Paper Separator Fingers Assy.
2. Remove two screws and the Toner Antispill Plate and Toner Antispill Seal.



**NOTE**

*When reinstalling the Toner Antispill Plate and Toner Antispill Seal, press them in the direction of the arrows.*

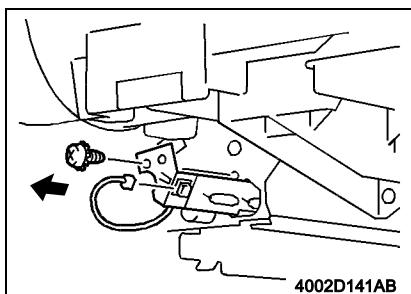
**(10) Cleaning of the Toner Antispill Seal**



1. Remove the Toner Antispill Seal.
2. Using a brush, clean the Toner Antispill Seal.

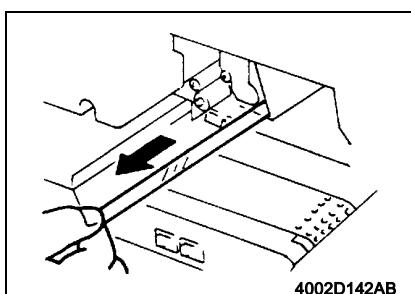


**(11) Removal of the Main Erase Lamp**

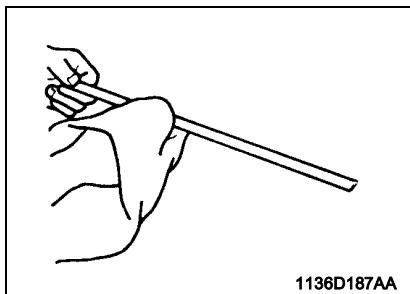


1. Swing down the Front Door.
2. Unplug one connector.
3. Remove one screw and the Main Erase Lamp.

**(12) Cleaning of the Main Erase Lamp Filter**

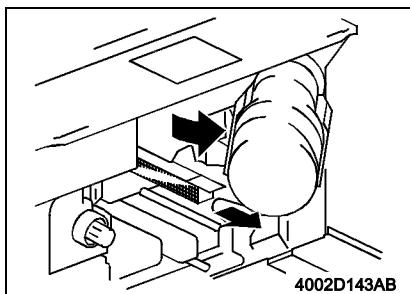


1. Swing down the Front Door.
2. Remove the Main Erase Lamp Filter.



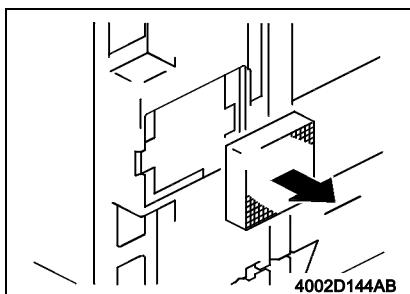
3. Using a soft cloth dampened with alcohol, wipe clean the Main Erase Lamp Filter.

#### (13) Removal of the Ozone Filter (PC Drum Charge Corona)



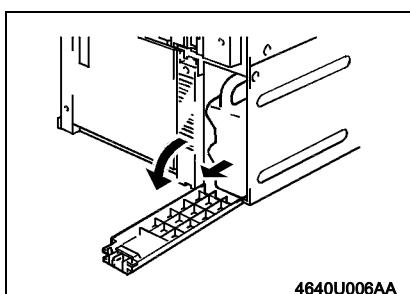
1. Swing down the Front Door.
2. Swing out the Main Hopper.
3. Slide out the Ozone Filter.

#### (14) Removal of the Ozone Filter (Image Transfer/Paper Separator Coronas)



1. Unhook one tab and remove the Filter Cover.
2. Pull out the Ozone Filter.

#### (15) Removal of the Toner Collecting Bottle



1. Slide out the drawers from the applicable paper source option.  
(There is no need of sliding out the drawer for LCC.)
2. Swing down the Toner Collecting Bottle Cover.
3. Remove the Toner Collecting Bottle.

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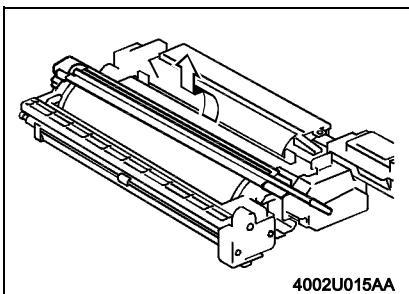
#### **NOTE**

*When the Toner Collecting Bottle has been replaced, clear the "Waste Toner-Count" count of "Consumables" available from "Counter" under the Tech. Rep. mode.*

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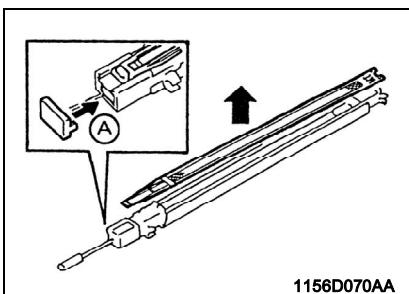
## 2-8. PC DRUM CHARGE CORONA AND IMAGE TRANSFER/ PAPER SEPARATOR CORONAS

### (1) Removal of the PC Drum Charge Corona

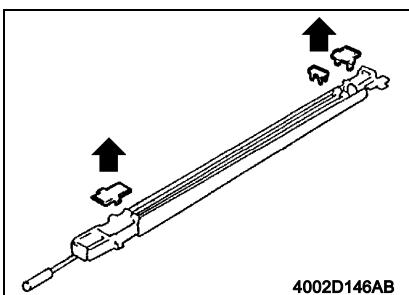


1. Swing down the Front Door and slide out the Developing Unit.
2. Move the PC Drum Charge Corona to the rear, raise it, and take it off.

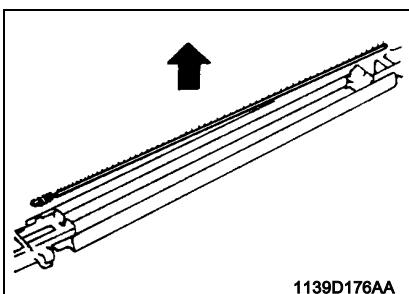
### (2) Cleaning of the PC Drum Charge Corona Housing



1. Remove the PC Drum Charge Corona.
2. Press the Mesh Holder on the front of the Corona Unit in the direction of arrow A to remove the Grid Mesh.



3. Remove the Cleaning Pad Holder.
4. Remove the End Caps from the front and rear ends of the Unit.

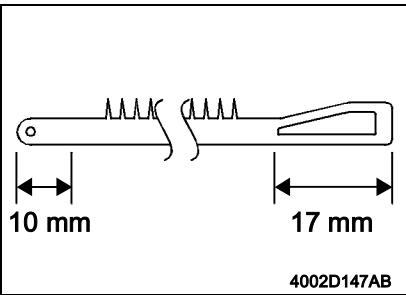


5. Remove the Comb Electrode.

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#### NOTES

- Use care not to deform the Comb Electrode.
  - When removing the electrode, first snap off its spring end.
-

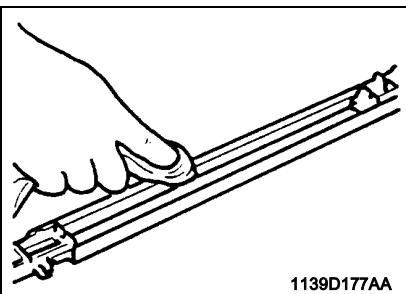


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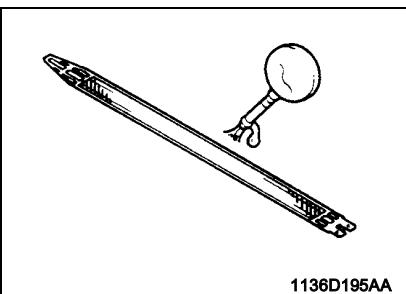
**NOTE**

*When handling the Comb Electrode, be sure to hold it onto its both ends.*

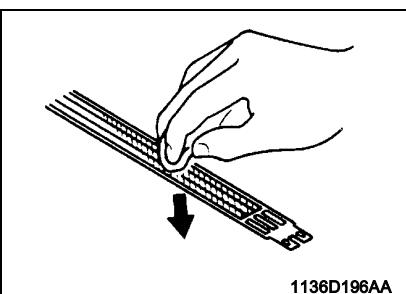
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6. Wipe clean the Housing with a soft cloth.



1. Blow all foreign matter off the Grid Mesh with a blower brush.

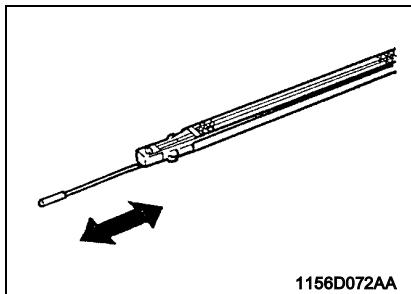


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**NOTES**

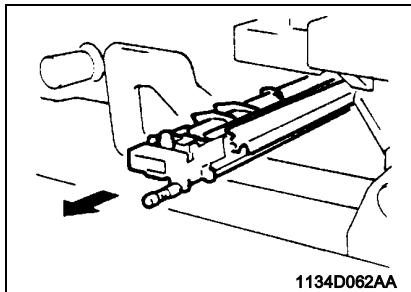
- If the blower brush is not effective in cleaning serious contamination of the Grid Mesh, use a soft cloth dampened with alcohol. At this time, place the Grid Mesh on a flat surface and sweep the cloth along the mesh.
  - After cleaning, use care not to touch the cleaned Grid Mesh with bare hands.
-

#### (4) Cleaning of the Comb Electrode

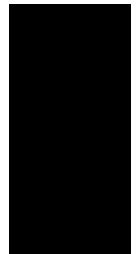


1. Clean Comb Electrode using the PC Drum Charge Corona Cleaning Lever.

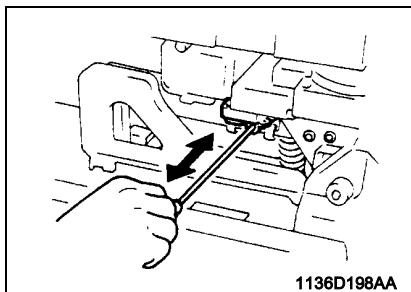
#### (5) Removal of the Image Transfer/Paper Separator Coronas



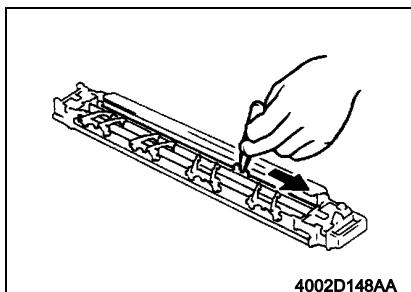
1. Swing down the Front Door.
2. Pull out the Transfer/Paper Separator Coronas.



#### (6) Cleaning of the Image Transfer Corona Wire



1. Swing down the Front Door.
2. Clean Image Transfer Corona Wire using the Image Transfer Corona Wire Cleaning Lever.



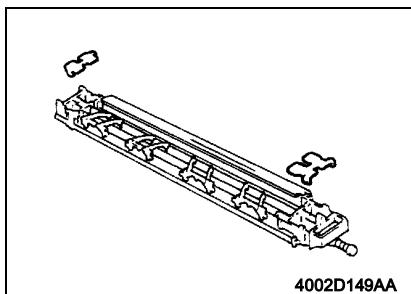
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#### NOTE

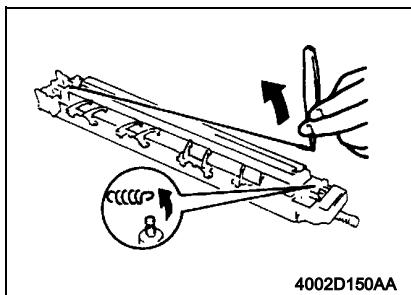
If the Image Transfer Corona Wire is seriously contaminated, dampen a soft cloth with alcohol, hold it with a pair of tweezers, and wipe the wire gently in one direction-from the hook end to the spring end.

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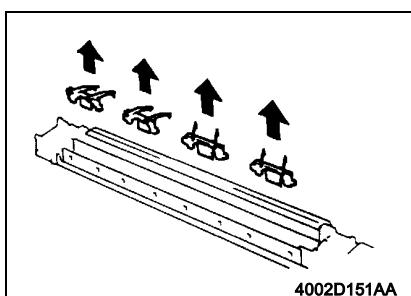
## (7) Removal of the Image Transfer Corona Wire



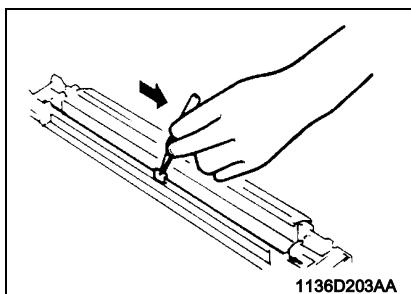
1. Remove the End Caps from the front and rear ends of the Unit.



2. Remove the corona wire, first at the spring end.



1. Remove the four Paper Guides.



2. Dampen a soft cloth with alcohol, hold it with a pair of tweezers, and wipe the Paper Separator Corona Wire gently in one direction.

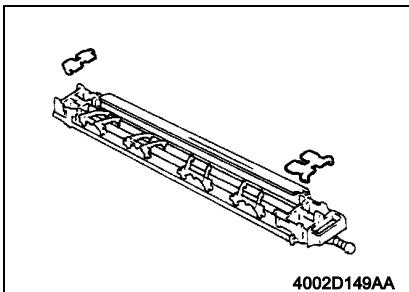
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**NOTE**

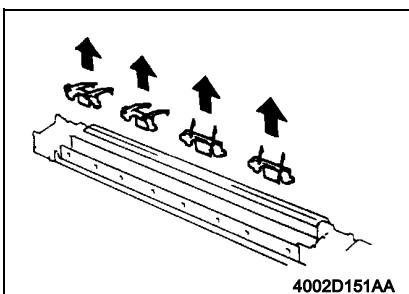
*Wipe the wire from the hook to spring end.*

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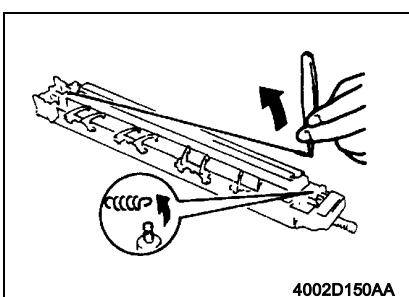
## (9) Removal of the Paper Separator Corona Wire



1. Remove the End Caps from the front and rear ends of the Unit.

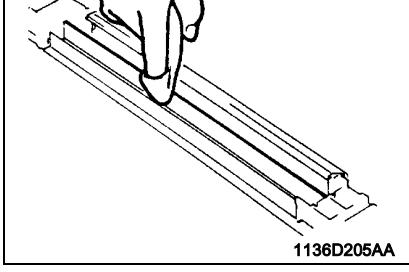


2. Remove the four Paper Guides.



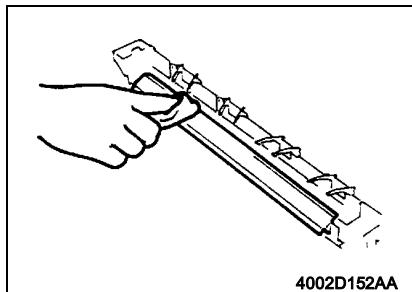
3. Remove the corona wire, first at the spring end.

## (10) Cleaning of the Image Transfer/Paper Separator Coronas Housing



1. Remove the four Paper Guides.
2. Remove the End Caps from the front and rear ends of the Unit.
3. Remove the corona wire, first at the spring end.
4. Wipe clean the Housing with a soft cloth.

**(11) Cleaning of the Pre-Image Transfer Guide Plate**

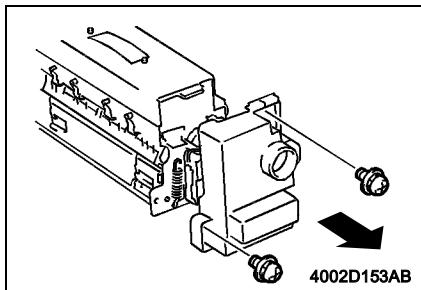


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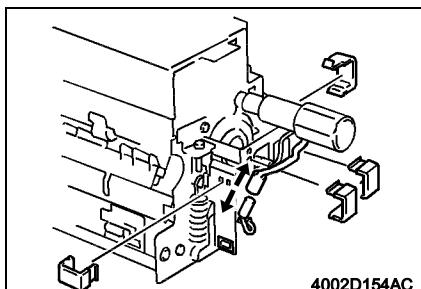
1. Using a soft cloth dampened with alcohol, wipe clean the Pre-Image Transfer Guide Plate.

## 2-9. FUSING UNIT

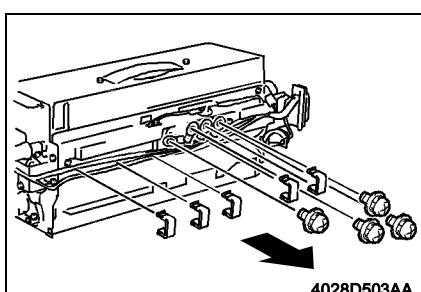
### (1) Disassembly of the Fusing Unit



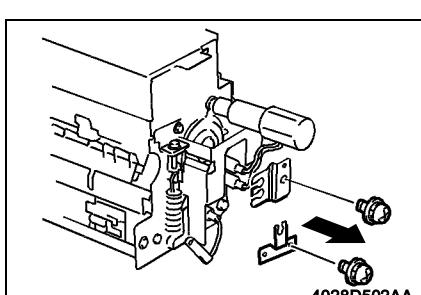
1. Remove the Fusing Unit.
2. Remove two screws and the Fusing Unit Front Cover.



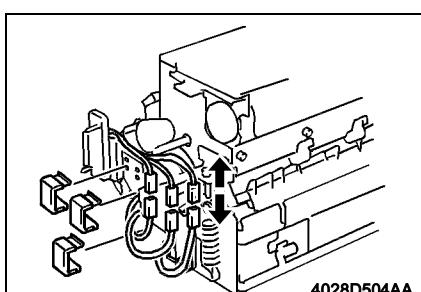
3. Remove the four harness holders.
4. Unplug one connector of the Heater Lamp on the front.
5. Remove the Heater Lamp harness from one edge cover.



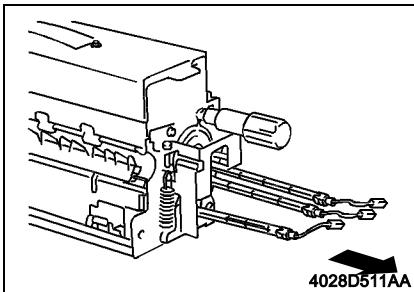
6. Remove five harness holders.
7. Remove four screws and the Heater Lamp harness.



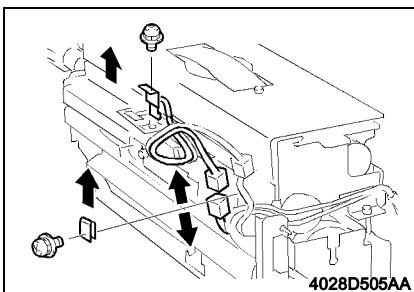
8. Remove one screw each and the upper and lower lamp holders at the front.



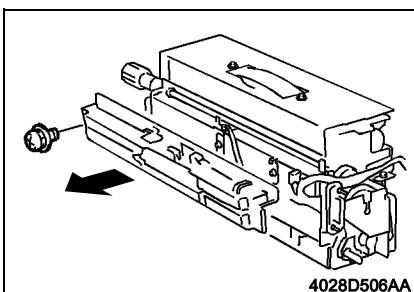
9. Remove four harness holders.
10. Remove the Upper Fusing Roller Heater Lamp harness from one wiring saddle.
11. Unplug three connectors of the Heater Lamp on the rear.
12. Remove the Upper and Lower Fusing Roller Heater Lamp harnesses from three edge covers.



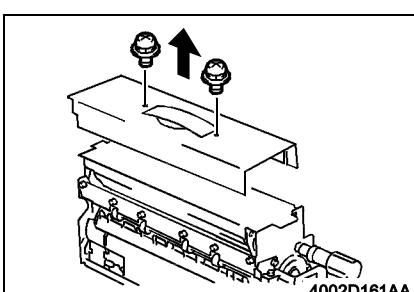
13. From the front side, slide out the Upper and Lower Fusing Roller Heater Lamps and the Fusing Roller Sub Heater Lamp.



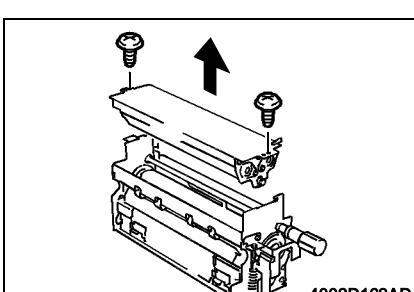
14. Unplug two Thermistor connectors.  
15. Remove one screw and the wiring saddle.  
16. Remove the Thermistor harness from the harness guide.  
17. Remove one screw and the harness.



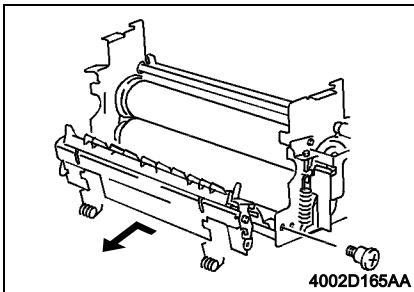
18. Remove one screw and the harness guide.



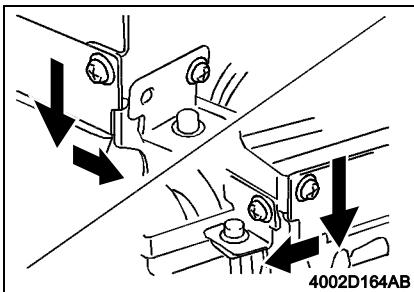
19. Remove two screws and the Upper Cover.



20. Remove two screws and the Web Roller Assy.

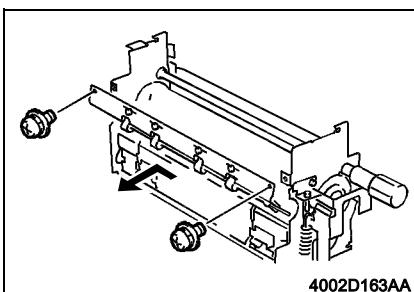


21. Remove two springs.
22. Remove one shoulder screw and the Lower Fusing Guide Plate Assy.

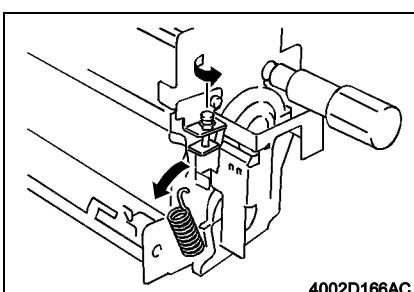


**NOTE**

*When reinstalling the Upper Fusing Guide Plate Assy, press both ends of the guide plate up against the frame.*



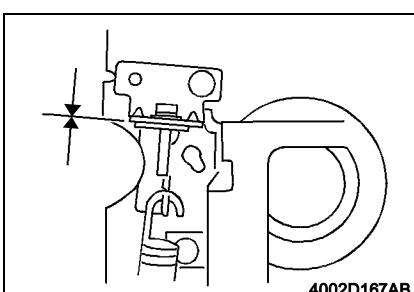
23. Remove two screws and the Upper Fusing Guide Plate Assy.



24. Loosen the front roller pressure screw and unhook the upper end of the spring.

**NOTE**

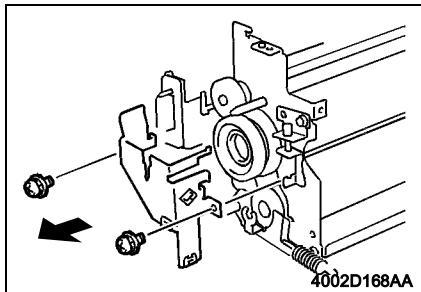
*Repeat the same step for the spring in the rear.*



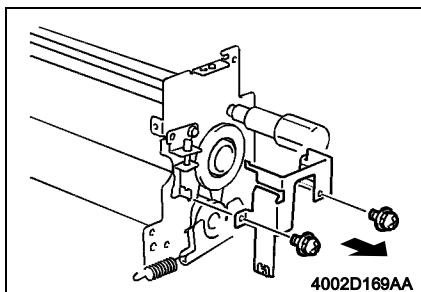
**NOTE**

*When tightening the roller pressure screws with the springs installed, tighten the front and rear ones alternately until there is no clearance in the mounting bracket.*

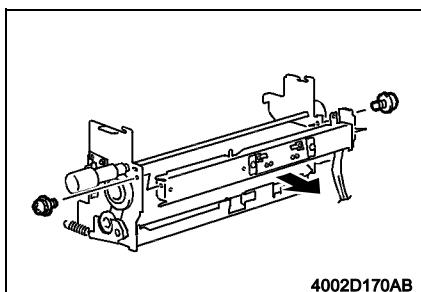
25. Remove two screws and the rear holder



26. Remove two screws and the front holder.



27. Remove two screws and the mounting bracket.

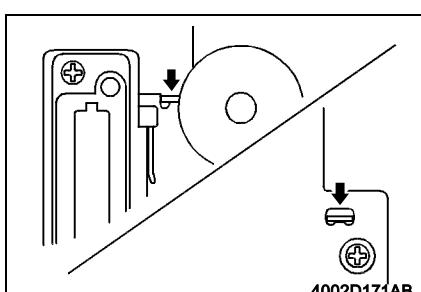


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**NOTE**

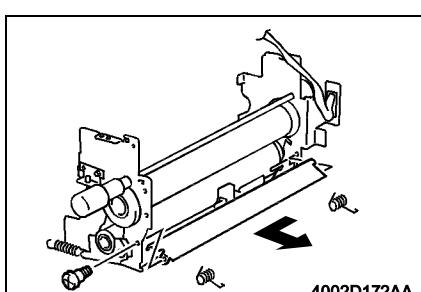
*When reinstalling the mounting bracket, press its both ends up against the frame.*

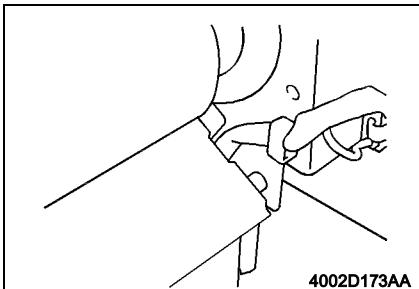
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28. Remove one shoulder screw and the Fusing Entrance Guide Plate.

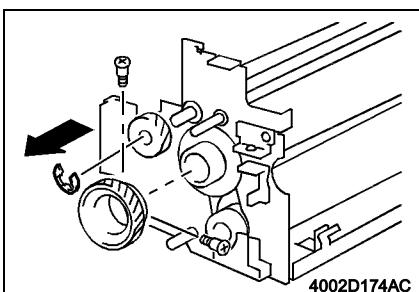
29. Remove two springs.



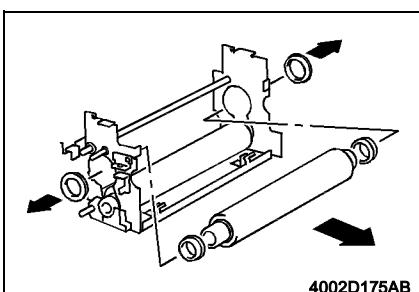


**NOTE**

*When reinstalling the Fusing Entrance Guide Plate, make sure that the rear harness is on the inside of the shoulder screw.*

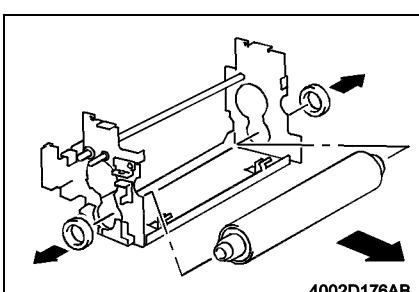


30. Snap off one E-ring and remove two shoulder screws and two gears.



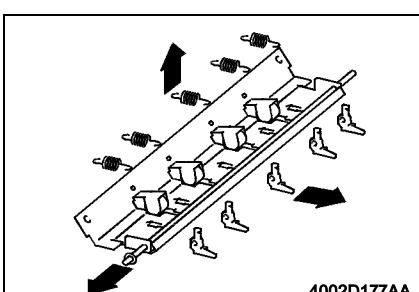
31. Remove two bearings.

32. Remove the bushing and Upper Fusing Roller.



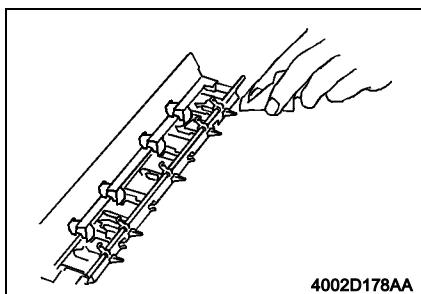
33. Remove the bearing and Lower Fusing Roller.

**(2) Removal of the Upper Fusing Paper Separator Fingers**



1. Remove the Upper Fusing Guide Plate Assy.
2. Remove five springs.
3. Slide out the shaft to remove five Upper Fusing Paper Separator Fingers.

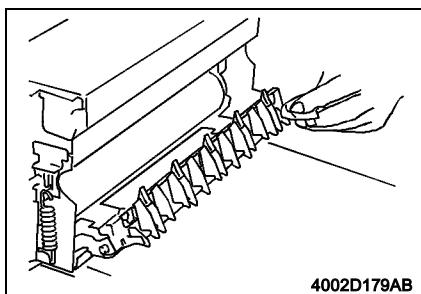
### **(3) Cleaning of the Upper Fusing Paper Separator Fingers**



4002D178AA

1. Remove the Upper Fusing Guide Plate Assy.
2. Using a soft cloth dampened with oil, wipe the five Upper Fusing Paper Separator Fingers clean of dirt.

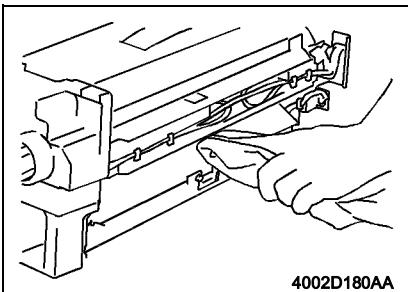
### **(4) Cleaning of the Lower Fusing Paper Separator Fingers**



4002D179AB

1. Remove the Fusing Unit Front Cover.
2. Swing open the Lower Fusing Guide Plate Assy. Using a soft cloth dampened with oil, wipe the five Lower Fusing Paper Separator Fingers clean of dirt.

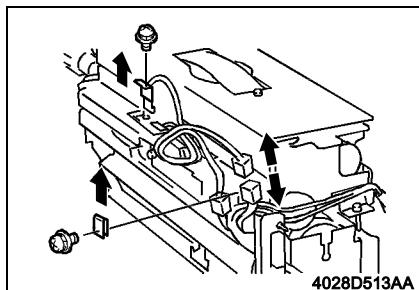
### **(5) Cleaning of the Entrance Guide Plate**



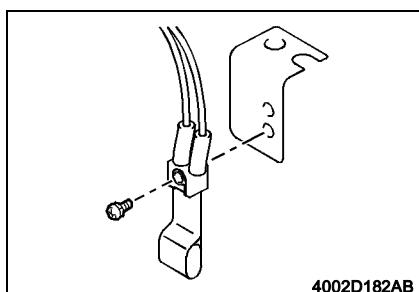
4002D180AA

1. Using a soft cloth dampened with alcohol, wipe clean the Entrance Guide Plate.

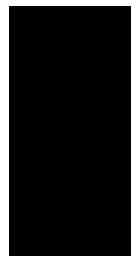
## (6) Removal of the Upper Fusing Roller Thermistor



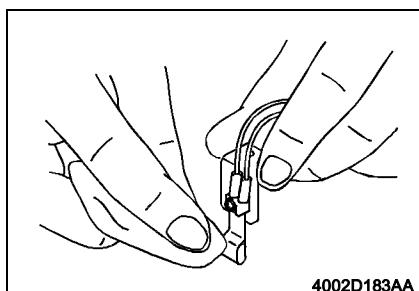
1. Unplug one Thermistor connector.
2. Remove one screw and the wiring saddle.
3. Remove the Thermistor harness from the harness guide.
4. Remove one screw and the harness.



5. Remove one screw and the Upper Fusing Roller Thermistor.

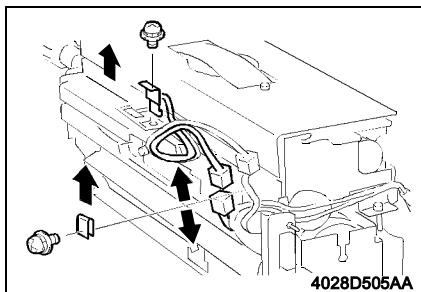


## (7) Cleaning of the Upper Fusing Roller Thermistor

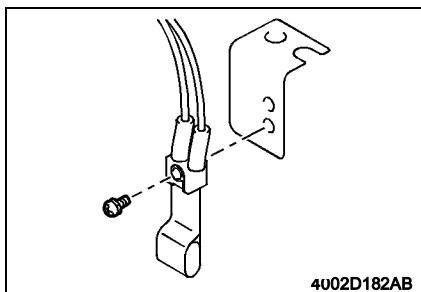


1. Remove the Upper Fusing Roller Thermistor Assy.
2. Using a soft cloth dampened with oil, wipe the Upper Fusing Roller Thermistor clean of dirt.

## (8) Removal of the Fusing Roller Sub Thermistor

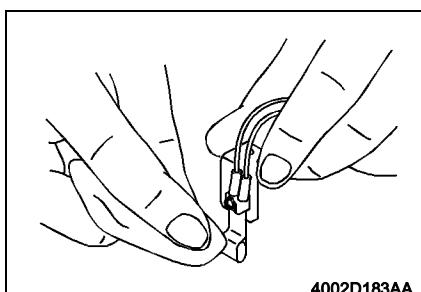


1. Unplug one Thermistor connector.
2. Remove one screw and the wiring saddle.
3. Remove the Thermistor harness from the harness guide.
4. Remove one screw and the harness.



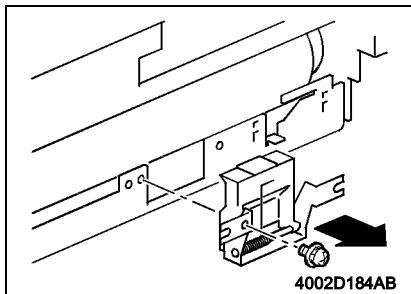
5. Remove one screw and the Fusing Roller Sub Thermistor.

## (9) Cleaning of the Fusing Roller Sub Thermistor

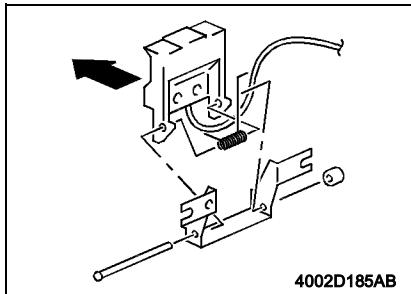


1. Remove the Upper Fusing Roller Thermistor Assy.
2. Using a soft cloth dampened with oil, wipe the Fusing Roller Sub Thermistor clean of dirt.

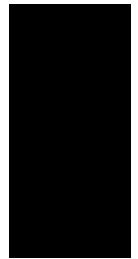
**(10) Removal of the Lower Fusing Roller Thermistor**



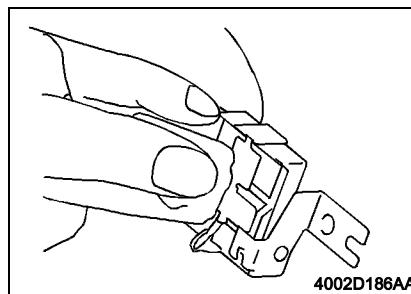
1. Slide out the Fusing Unit.
2. Remove the Fusing Unit Front Cover.
3. Remove the Pre-Fusing Guide Plate.
4. Remove one screw to free the Lower Fusing Roller Thermistor Assy.



5. Remove the rubber stopper, and slide out the shaft.
6. Remove the Lower Fusing Roller Thermistor.

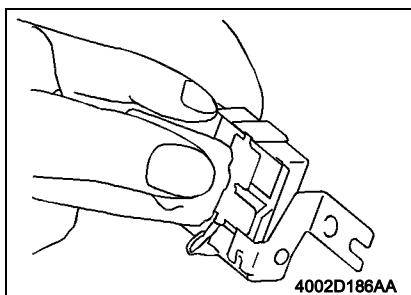


**(11) Cleaning of the Lower Fusing Roller Thermistor**



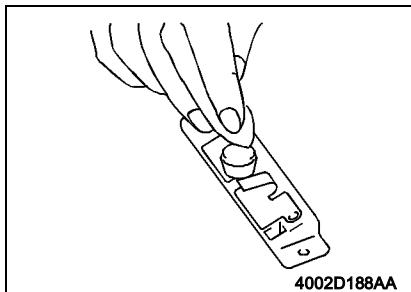
1. Remove the Lower Fusing Roller Thermistor Assy.
2. Using a soft cloth dampened with oil, wipe the Lower Fusing Roller Thermistor clean of dirt.

**(12) Cleaning of the Lower Fusing Roller Thermistor**



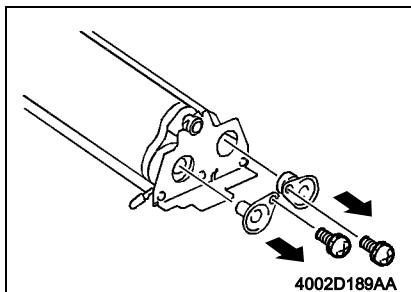
1. Remove the Lower Fusing Roller Thermistor Assy.
2. Using a soft cloth dampened with oil, wipe the Lower Fusing Roller Thermistor clean of dirt.

### (13) Cleaning of the Upper Fusing Roller Thermostat



1. Remove the Upper Fusing Roller Thermostat Assy.
2. Using a soft cloth dampened with silicone oil, wipe the Upper Fusing Roller Thermostat clean of dirt.

### (14) Removal of the Web Roller



1. Remove the Web Roller Assy.
2. Remove two screws and the Web Roller bushing and Web Take-Up Roller bushing.

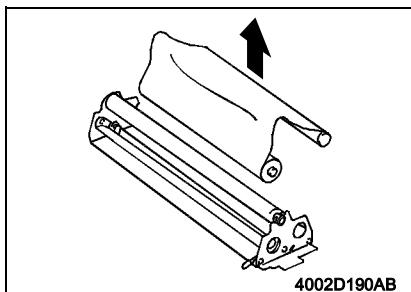
#### **NOTE**

*When reinstalling the Web Roller bushing and Web Take-Up Roller bushing, ensure that they are in correct position without being tilt or out of correct position.*

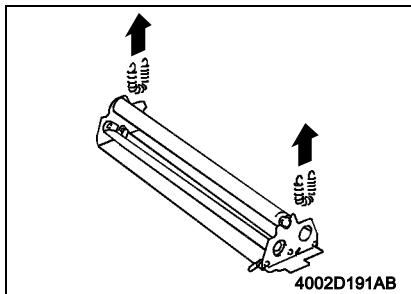
3. Remove the Web Roller and Web Take-Up Roller.

#### **NOTES**

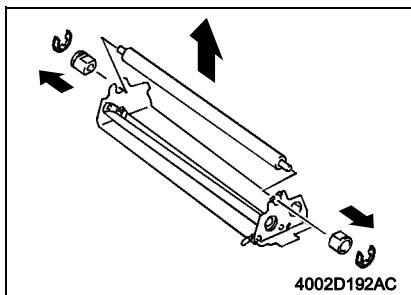
- *When reinstalling the Web Roller and Web Take-Up Roller, wind the web around the Web Take-Up Roller at least one complete turn. Make also sure that the web is not slack off.*
- *When the Web Roller has been removed, clear Web-Count of Consumables Counter available from Tech. Rep. mode.*



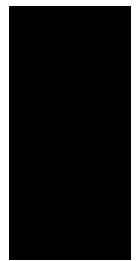
**(15) Removal of the Web Pressure Roller**



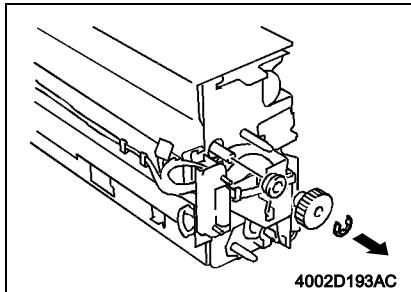
1. Remove the Web Roller Assy.
2. Remove the Web Roller and Web Take-Up Roller.
3. Remove the springs at the front and rear.



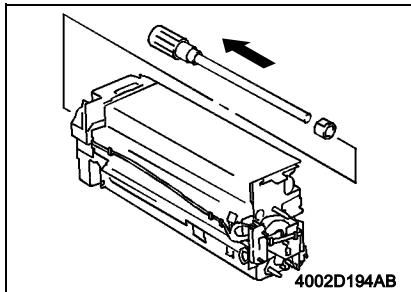
4. Remove the E-rings and bushings from the front and rear end and remove the Web Pressure Roller.



#### (16) Removal of the Misfeed Removal Knob Bushing

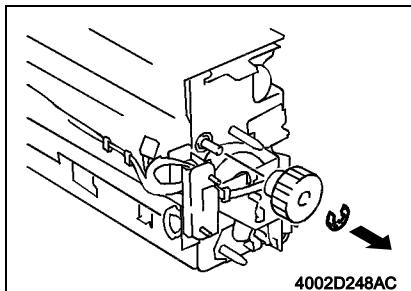


1. Slide out the Fusing Unit.
2. Remove one E-ring and the gear and bearing.



3. Remove the Misfeed Removal Knob Assy. and bushing.

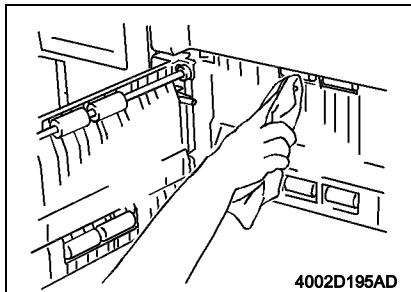
#### (17) Removal of the Fusing Unit Drive Coupling Gear



1. Slide out the Fusing Unit.
2. Remove one E-ring and the Fusing Unit Drive Coupling Gear.

## 2-10. TURNOVER UNIT

#### (1) Cleaning of the Turnover Roller, Transport Rollers

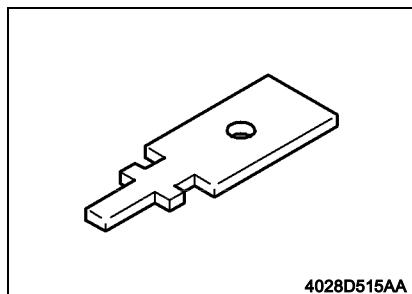


1. Open the Lower Left Door.
2. Using a soft cloth dampened with alcohol, wipe clean the Turnover Roller, Transport Rollers.

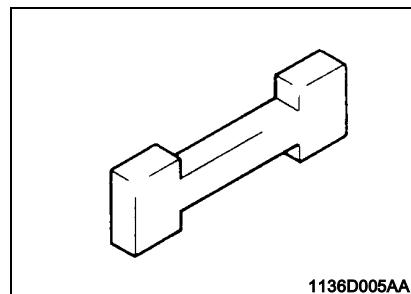
### **3. ADJUSTMENT**

#### **3-1. ADJUSTMENT JIGS AND TOOLS USED**

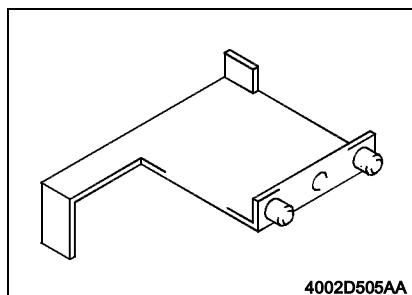
**1. Front Door Interlock Switch  
Actuating Jig**



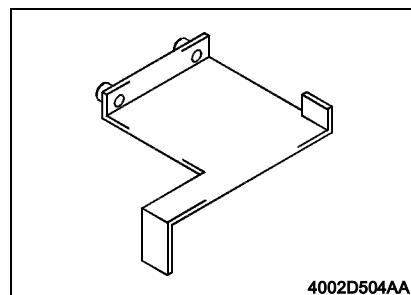
**2. Predrive Inhibit Switch  
Actuating Jig**



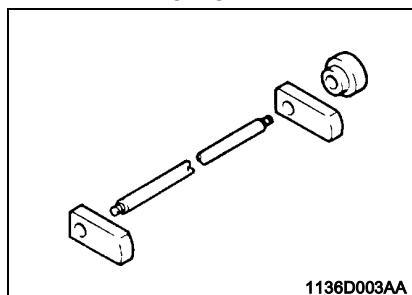
**3. Scanner Positioning Jig  
(Front)**



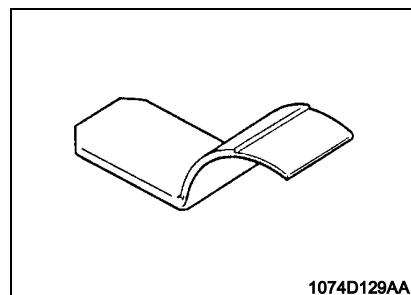
**4. Scanner Positioning Jig  
(Rear)**



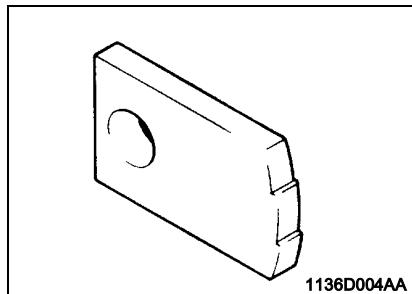
**5. Sleeve/Magnet Roller  
Positioning Jig**



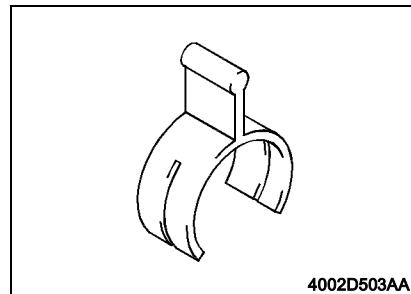
**6. D.B. Adjusting Jigs**



**7. PC Drum Paper Separator  
Finger Positioning Jig**



**8. Scanner Drive Cable  
Holding Jig**



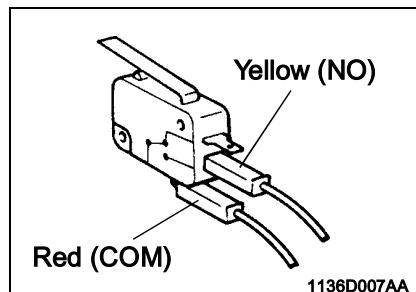
### **3-2. ADJUSTMENT REQUIREMENTS LIST**

Adjustment Item	Requirements	Ref. Page
Touch Panel Adj.	Automatically adjusted	 D-85
Orig. Size Adjust	↑	 D-86
F8 ATDC Sensor	↑	 D-87
F5 AIDC Sensor	↑	 D-88
Registration (CD)	$5.0 \pm 0.5$ mm	 D-89
Registration (FD)	↑	 D-91
Lead Edge Erase	$3.0 \pm 1.0$ mm	 D-93
Trail Edge Erase	↑	 D-95
Loop Adjustment	Approx. 4.0 mm	 D-97
Erasure Width	3.0 mm	 D-99
Zoom (CD)	$200 \pm 1.0$ mm	 D-101
Zoom (FD)	$300 \pm 1.0$ mm	 D-103
Scale (CD)	_____	 D-105
Scale (FD)	_____	 D-107

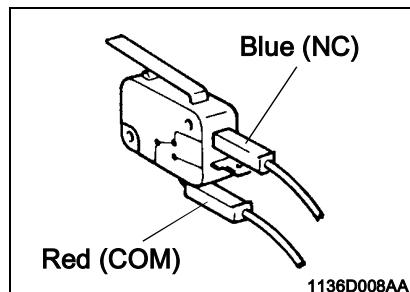
### 3-3. ADJUSTMENT OF SWITCHES

#### (1) Microswitches

The following microswitches are used in various parts of this copier.



Wiring for the NO Type



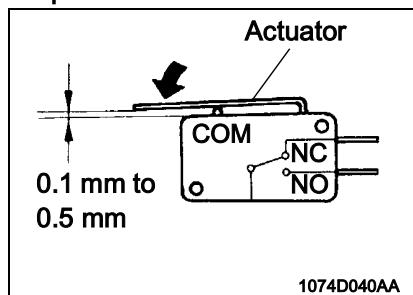
Wiring for the NC Type

NC (Normally-Closed) : Current flows between NC and COM when the actuator is open.

NO (Normally-Open) : Current flows between NC and COM when the actuator is closed.

COM (Common) : Common contact for NC and NO.

#### Requirement



The gap between the switch and actuator should be 0.1 to 0.5 mm when the actuator is closed.

#### Out-of-Adjustment (When the actuator is closed)

- If the gap between the switch and actuator is too big, current does not always flow to NC or NO.
- If there is no gap between the switch and actuator, the actuator is bent or the switch can be broken.

## 3-4. ADJUSTMENT OF BELT TENSION

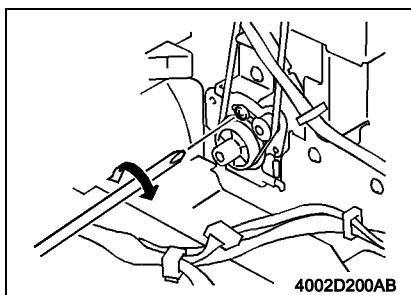
### Checks after Adjustment

- Turn the Timing Belt and check that all the Pulleys and grooves of the Belt fit securely.
- Each Belt should flex a little when the Belt is lightly pressed with a finger.

### Reference

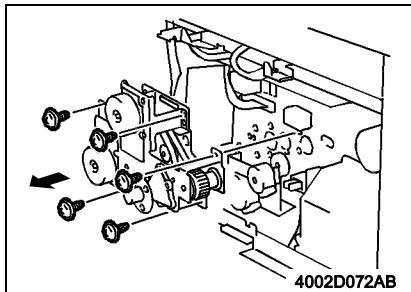
Since a given tension is applied by a tension spring to the Tension Lever that maintains the tension of each timing belt, adjustment is completed by re-tightening the mounting screw after it has been loosened.

#### (1) Adjustment of the Suction Drive Timing Belt

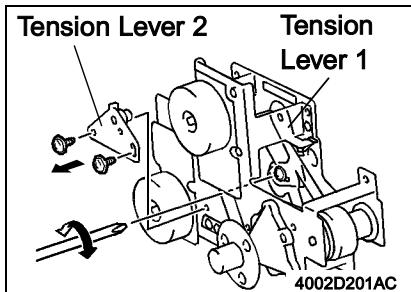


1. Remove the Rear Cover.
2. Loosen the screw by which the Tension Lever is mounted as shown on the left and then re-tighten it.

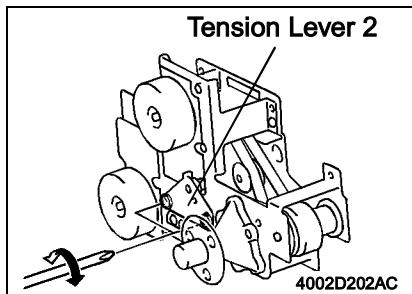
#### (2) Adjustment of the Developing Unit Drive Timing Belt



1. Remove the Rear Cover.
2. Remove the Master Board mounting bracket Assy. and FlyWheel.
3. Remove five screws and the Developing Unit Drive Assy.

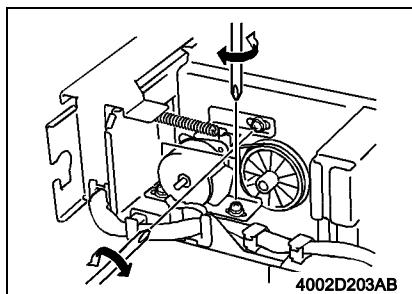


4. Remove two screws and the Tension Lever 2.
5. Loosen the screw by which the Tension Lever 1 is mounted as shown on the left and then re-tighten it.
6. Reinstall the Tension Lever 2.



7. Loosen two screws by which the Tension Lever 2 is mounted as shown on the left and then re-tighten it.

### (3) Adjustment of the Scanner Motor Timing Belt



1. Remove the Rear Upper Cover.
2. Loosen three screws on the Scanner Motor mounting bracket and then re-tighten them.



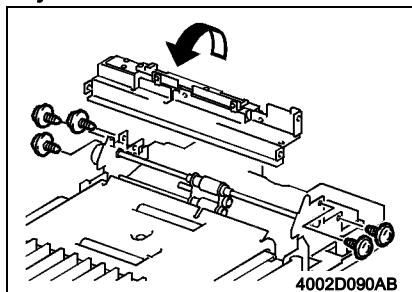
### 3-5. SOLENOID POSITION ADJUSTMENT

#### (1) Adjustment of Manual Feed Paper Pick-Up Solenoid

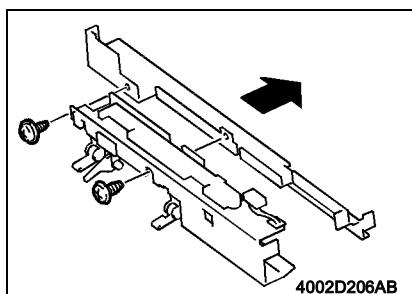
##### Requirement

The Paper Stoppers should be fixed perpendicularly when the Pick-Up Solenoid is ON.

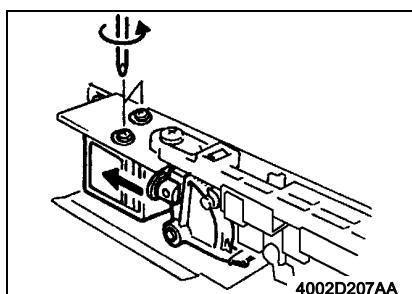
##### Adjustment Procedure



1. Remove the Right Cover.
2. Remove five screws and the Manual Feed Paper Pick-Up Solenoid mounting bracket Assy.



3. Remove two screws and the bracket.



4. Set the Pick-Up Solenoid to ON.

##### Reference

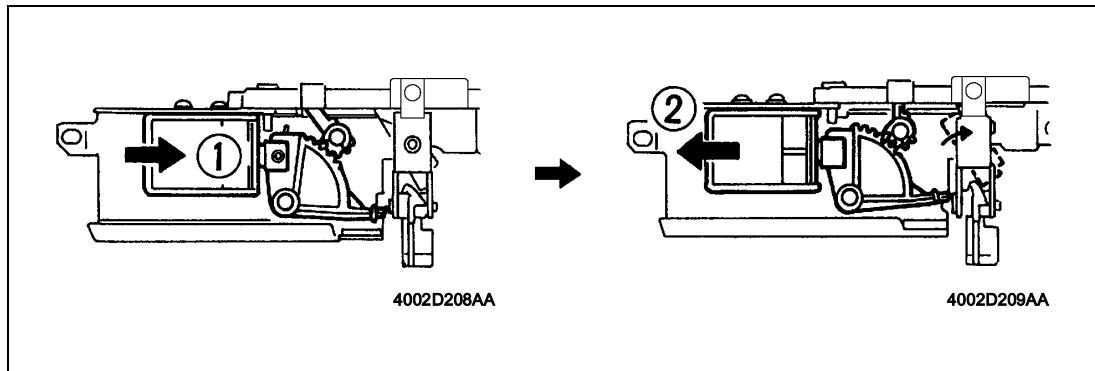
Since a keeper solenoid is used as the Pick-Up Solenoid, the set condition is kept when the Pick-Up Solenoid is on.

5. Move the Pick-Up Solenoid in the direction of arrow ①, then slowly move it in the direction of arrow ②.
6. Move the Pick-Up Solenoid up to the position where the Lock Lever of the Paper Stopper becomes perpendicular (the position where the Paper Stopper is locked).

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**NOTES**

- Be careful that the Pick-Up Solenoid is canceled from its set condition if moved excessively.
  - If the set condition is canceled, set the solenoid to the energized (ON) position again and repeat steps starting with step 6.
- 



7. After the adjustment has been made, tighten the two the Pick-Up Solenoid mounting screws.

---

**Check after Adjustment**

Check that the Paper Stopper is securely locked perpendicularly when the Pick-Up Solenoid is ON.

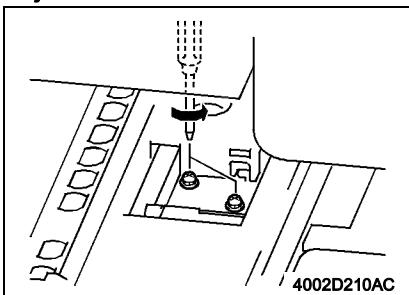
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## (2) Adjustment of Turnover Roller Retraction Solenoid

### Requirement

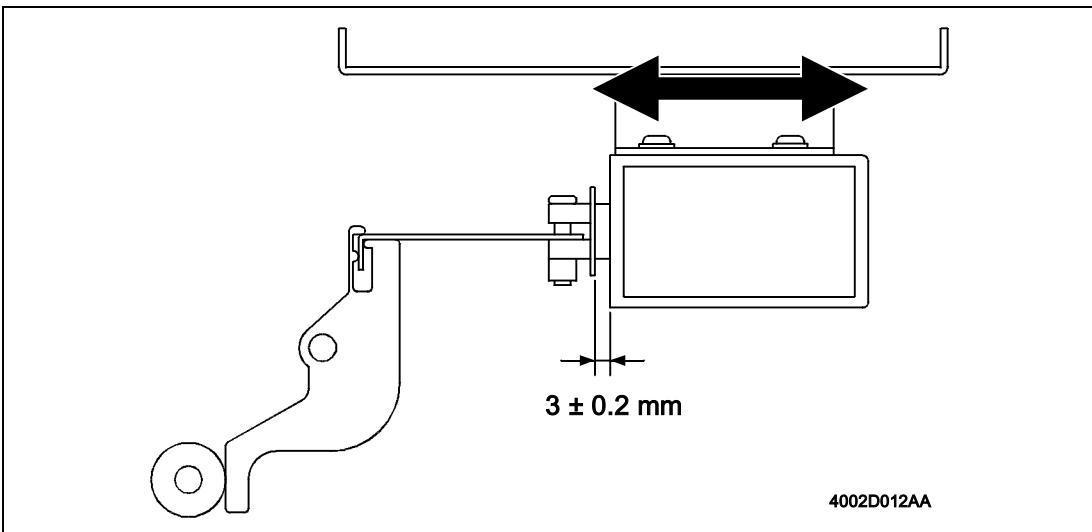
The gap between the E-ring of the plunger and the Retraction Solenoid should be  $3 \pm 0.2$  mm when the Retraction Solenoid OFF.

### Adjustment Procedure



1. Slide out the Fusing Unit.
2. Loosen two screws by which the Retraction Solenoid is mounted.

3. Move the Retraction Solenoid so that the gap between the E-ring of the plunger and the Solenoid is  $3 \pm 0.2$  mm when the Retraction Solenoid OFF.



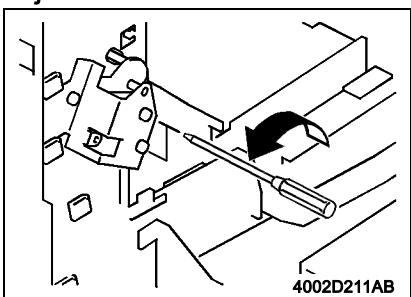
4. After adjustment is completed, tighten the two Retraction Solenoid mounting screws.

### (3) Adjustment of Exit/Duplex Switching Solenoid

#### Requirement

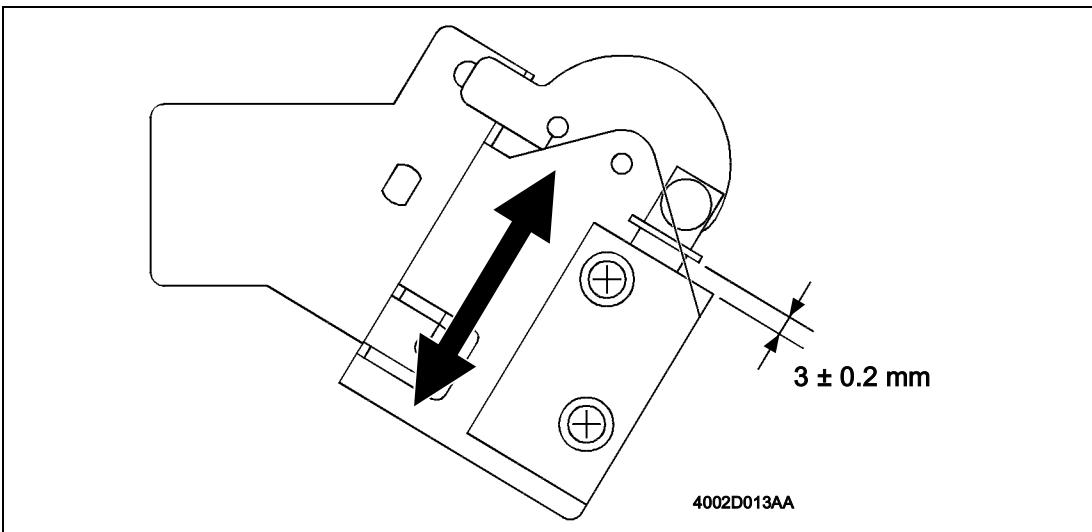
The gap between the E-ring of the plunger and the Switching Solenoid should be  $3 \pm 0.2$  mm when the Switching Solenoid OFF.

#### Adjustment Procedure



1. Remove the Left Cover.
2. Slide out the Fusing Unit.
3. Remove the Left Inner Cover.
4. Loosen two screws by which the Switching Sole-noid is mounted.

5. Move the Switching Solenoid so that the gap between the E-ring of the plunger and the Solenoid is  $3 \pm 0.2$  mm when the Switching Solenoid OFF.



6. After adjustment is completed, tighten the two Switching Solenoid mounting screws.

#### (4) Positioning of the PC Drum Paper Separator Fingers (Separator Finger Solenoid)

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##### Requirement

The gap between the three PC Drum Paper Separator Fingers and the PC Drum should be 0.3 to 1.0 mm when the Separator Finger Solenoid OFF.

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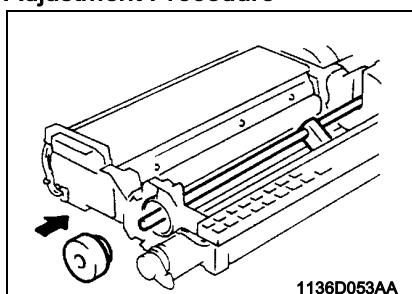
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##### NOTE

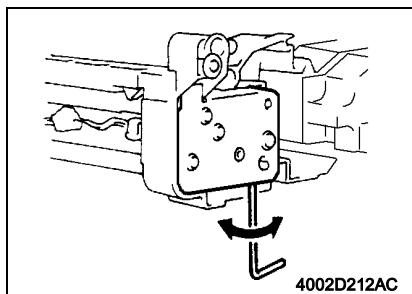
*Use care not to deform the Separator Fingers during the adjustment procedure.*

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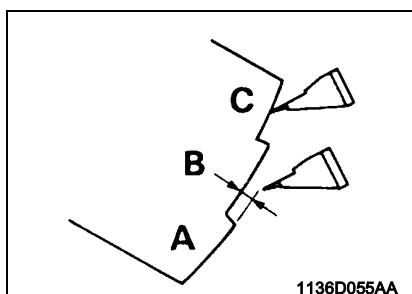
##### Adjustment Procedure



1. Attach the PC Drum Paper Separator Finger Positioning Jig to the Developer Unit.



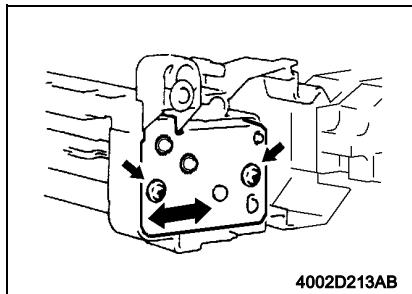
2. With the Separator Finger Solenoid in the deenergized position, adjust the position of the three Paper Separator Fingers using an Allen wrench.



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##### Adjustment Instructions

- With the solenoid in the deenergized position, the tip of the finger should be at a point between A to B end.
  - With the solenoid energized, the tip of the finger should touch C.
- 



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##### NOTE

*If the requirements are not met, loosen the hexagon socket head screw, loosen the two screws indicated on the left, reposition the solenoid, and make the adjustment once again.*

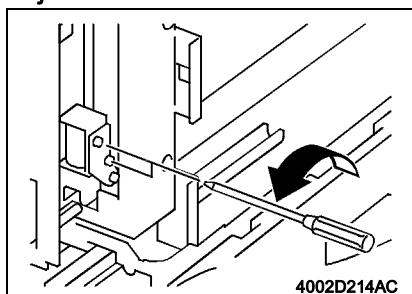
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## (5) Adjustment of Turnover Route Switching Solenoid

### Requirement

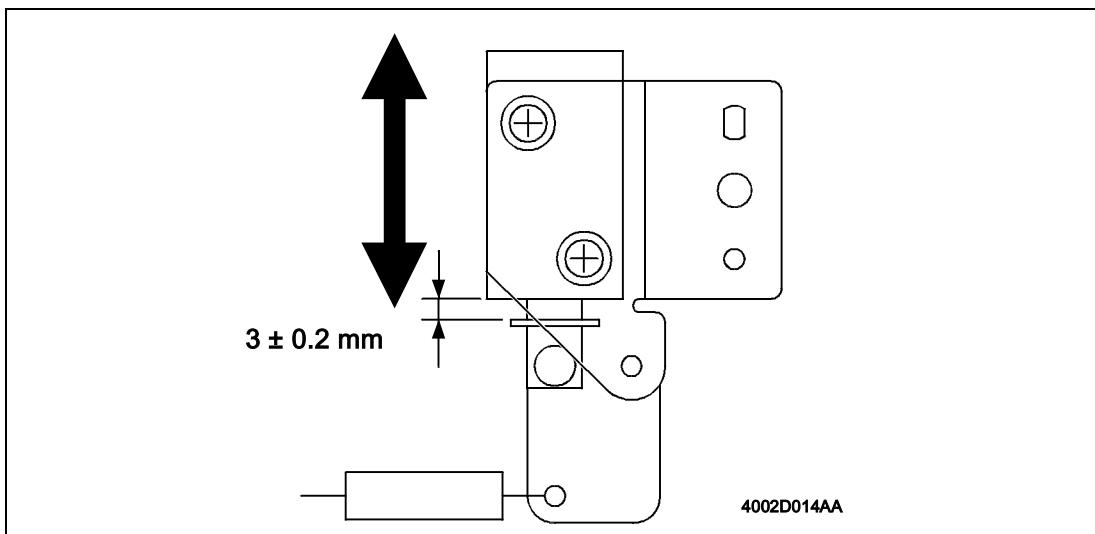
The gap between the E-ring of the plunger and the Switching Solenoid should be  $3 \pm 0.2$  mm when the Switching Solenoid OFF.

### Adjustment Procedure



1. Remove the Left Cover.
2. Loosen two screws by which the Switching Sole-noid is mounted.

3. Move the Switching Solenoid so that the gap between the E-ring of the plunger and the Solenoid is  $3 \pm 0.2$  mm when the Switching Solenoid OFF.



4. After adjustment is completed, tighten the two Switching Solenoid mounting screws.

### **3-6. ACCESSING THE TECH. REP. MODE AND ADJUST MODE**

#### **(1) Accessing the Tech. Rep. Mode**

1. Press the Utility key.
2. Touch [Meter Count].
3. Press the following keys in this order:  
Stop → 0 → 0 → Stop → 0 → 1

#### **(2) Accessing the Adjust Mode**

1. Enter the Tech. Rep. mode.
2. Press the following keys in this order:  
Start → Stop

### 3-7. ELECTRICAL/IMAGE ADJUSTMENT

#### (1) Touch Panel Adj.

*Make this adjustment after either of the following procedures have been performed:*

- *Memory Clear*
- *Control Panel replacement*

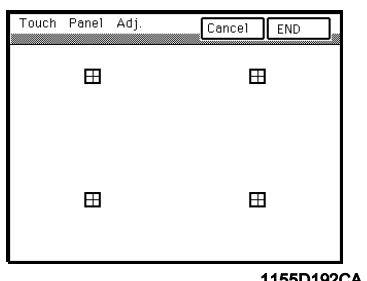
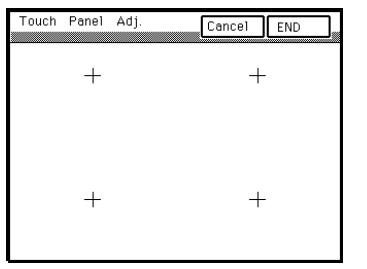
##### Adjustment Procedure

1. Call the Tech. Rep. mode to the screen.
2. Touch [Tech. Rep. Choice] and [System Set], in that order.
3. Touch [Touch Panel Adj.].
4. With the tip of a pen or similar object, touch the four crosses (+) on the screen in sequence.

##### NOTES

- *These crosses may be touched in any order; but be sure to touch the center of each cross.*
- *Use care not to damage the screen surface with the tip of the pen.*

5. The cross touched changes into a grid marker (that consists of a square with a cross superimposed).
6. Touch [END].

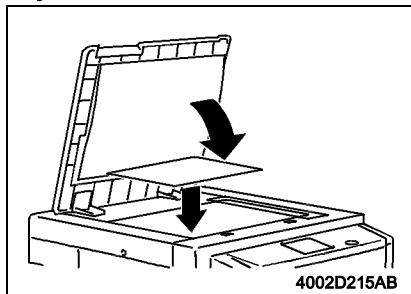


## (2) Orig. Size Adjust

*Make this adjustment after any of the following procedures have been performed:*

- *Memory Clear*
- *The original size is incorrectly detected*
- *Replacement of the CCD Unit and Scanner parts*
- *An Original Size Detecting Sensor has been replaced or added*

### Adjustment Procedure



1. Place a blank sheet of A3 or 11 × 17 paper on the Original Glass and lower the Original Cover.

2. Call the Tech. Rep. mode to the screen.
3. Touch [I.R. & EDH Check].
4. Touch [Function (I.R.)].
5. Touch [Orig. Size Adjust].
6. Press the Start Key to execute Orig. Size Adjust.

#### **NOTE**

*The Start key remains lit up orange while this function is being run and lights up green as soon as the sequence is completed.*

7. If the adjustment results have been made okay, touch [Save].

#### **NOTE**

*If the adjustment results have been NG, refer to "I/O Check List" of TROUBLESHOOTING.*

### (3) F8 ATDC Sensor

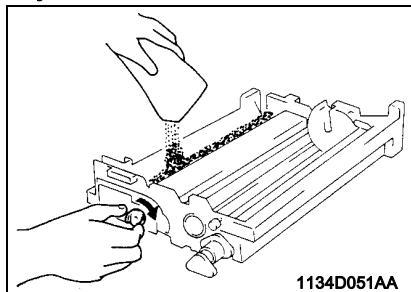
*Make this adjustment after any of the following procedures have been performed:*

- *Developer replacement*
- *ATDC replacement*
- *Memory Clear*

#### **NOTE**

*Make this adjustment before running an F5 AIDC Sensor operation.*

#### Adjustment Procedure



1. Load the Developing Unit with fresh developer.
2. Install the Developing Unit in the copier.
3. Close the Front Door.

#### **NOTE**

*Do not open and close the Front Door until the F8 ATDC Sensor operation is completed after the Power Switch has been turned ON.*

4. Turn the Power Switch ON.
5. Call the Tech. Rep. mode to the screen.
6. Touch [Function].
7. Touch [Printer].
8. Touch [F8 ATDC Sensor].
9. Press the Start Key to let the copier make the F8 ATDC Sensor. (It will run for about 4 minutes.)

#### **NOTES**

- *Note that the press of the Start Key lets the ATDC Sensor Adjustment run automatically. Run this function only after the developer has been changed, ATDC Sensor replaced.*
- *While the copier is in the adjustment cycle, the Start Key is lit up orange. The key turns green as soon as the adjustment cycle is completed.*

10. Call the Adjust mode to the screen.
11. Touch [Printer].
12. Touch [ATDC Control].
13. Write down the value for "Current" in the ATDC column on the Adjust Label.

#### **(4) F5 AIDC Sensor**

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*Make this adjustment after any of the following procedures have been performed:*

- *Developer replacement*
  - *ATDC replacement*
  - *Memory Clear*
- 

#### **NOTE**

*This adjustment must be made after F8 ATDC Sensor.*

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#### **Adjustment Procedure**

1. Turn the Power Switch ON.
  2. Call the Tech. Rep. mode to the screen.
  3. Touch [Function].
  4. Touch [Printer].
  5. Touch [F5 AIDC Sensor].
  6. Press the Start Key to let the copier make the F5 AIDC Sensor. (It will run for about 30 seconds.)
- 

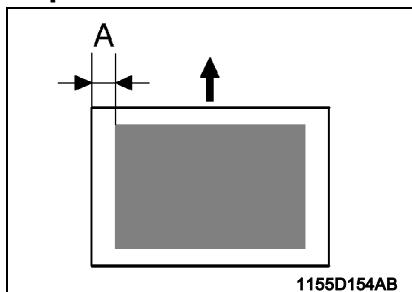
#### **NOTE**

*While the copier is in the adjustment cycle, the Start Key is lit up orange. The key turns green as soon as the adjustment cycle is completed.*

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## (5) Registration (CD)

### Requirement



Width A on the test pattern output should fall within the following range.

Specification	Adjust Mode	Setting Range
$5.0 \pm 0.5 \text{ mm}$	Registration (CD)	-8.2 to +8.2

*This adjustment must be made after the PH Unit has been replaced.*

### Adjustment Procedure

1. Call the Adjust mode to the screen.
2. Touch [Printer].
3. Touch [Registration (CD)].
4. Select the paper source to be checked and adjusted.
5. Press the Start Key to let the copier produce a test pattern.
6. Check to see if width A on the test pattern is up to the specifications. If it is outside the specified range, perform the following adjustment steps.

7. Press the Clear key to clear the current setting value.

Use to clear the setting value.

Use to enter the setting value.

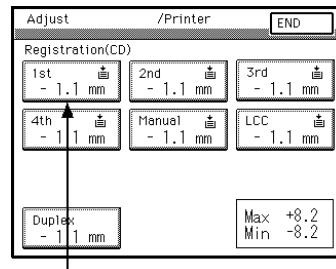
Use to change the + or - sign.

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8. Use the 10-key pad to change the setting value.

#### **NOTE**

*Use the Access key to select the sign of + or -.*



Setting Value

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#### **Setting Instructions**

If width A is longer than the specifications, make the setting value smaller than the current one.

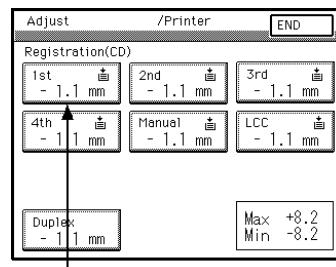
If width A is shorter than the specifications, make the setting value greater than the current one.

9. Press the Start key to let the copier produce a test pattern.

10. Check to see if width A on the test pattern is up to the specifications.

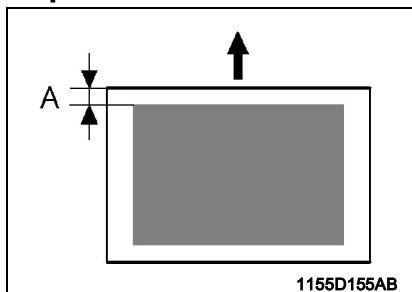
If it is outside the specified range, change the setting value and make a check again.

11. If width A falls within the specified range, touch [END] to validate the setting value.



## (6) Registration (FD)

### Requirement



Width A on the test pattern output should fall within the following range.

Specification	Adjust Mode	Setting Range
$5.0 \pm 0.5 \text{ mm}$	Registration (FD)	-8.2 to +8.2

*This adjustment must be made after the PH Unit has been replaced.*

### Adjustment Procedure

1. Call the Adjust mode to the screen.
2. Touch [Printer].
3. Touch [Registration (FD)].
4. Press the Start Key to let the copier produce a test pattern.
5. Check to see if width A on the test pattern is up to the specifications. If it is outside the specified range, perform the following adjustment steps.

6. Press the Clear key to clear the current setting value.

Use to clear the setting value.

Use to enter the setting value.

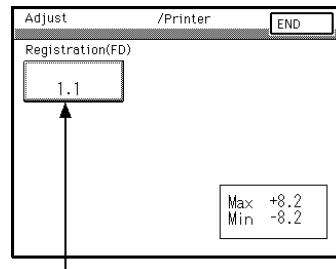
Use to change the + or - sign.

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7. Use the 10-key pad to change the setting value.

**NOTE**

*Use the Access key to select the sign of + or -.*



Setting Value

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**Setting Instructions**

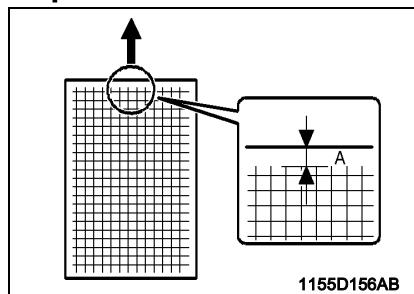
If width A is longer than the specifications, make the setting value smaller than the current one.

If width A is shorter than the specifications, make the setting value greater than the current one.

8. Press the Start key to let the copier produce a test pattern.
9. Check to see if width A on the test pattern is up to the specifications.  
If it is outside the specified range, change the setting value and make a check again.
10. If width A falls within the specified range, touch [END] to validate the setting value.

## (7) Lead Edge Erase

### Requirement



Width A on the test pattern output should fall within the following range.

**NOTE**

*The measurement shall be taken at the center on the leading edge of the paper.*

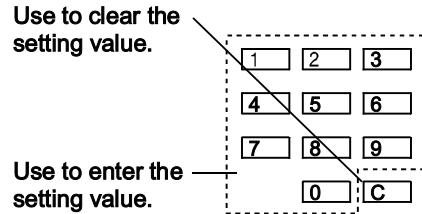
Specification	Adjust Mode	Setting Range
$3.0 \pm 1.0 \text{ mm}$	Lead Edge Erase	0 to 5

*This adjustment must be made after the PH Unit has been replaced and following Registration (CD/FD).*

### Adjustment Procedure

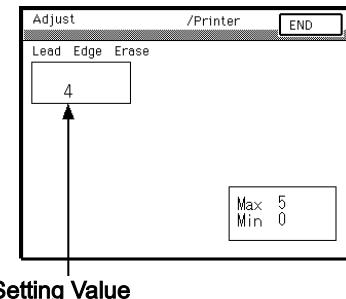
1. Call the Adjust mode to the screen.
2. Touch [Printer].
3. Touch [Lead Edge Erase].
4. Press the Start Key to let the copier produce a test pattern.
5. Check to see if width A on the test pattern is up to the specifications. If it is outside the specified range, perform the following adjustment steps.

6. Press the Clear key to clear the current setting value.



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7. Use the 10-key pad to change the setting value.



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#### Setting Instructions

If width A is longer than the specifications, make the setting value smaller than the current one.

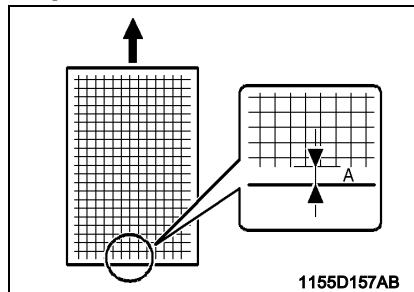
If width A is shorter than the specifications, make the setting value greater than the current one.

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8. Press the Start key to let the copier produce a test pattern.
9. Check to see if width A on the test pattern is up to the specifications.  
If it is outside the specified range, change the setting value and make a check again.
10. If width A falls within the specified range, touch [END] to validate the setting value.

## (8) Trail Edge Erase

### Requirement



Width A on the test pattern output should fall within the following range.

#### NOTE

*The measurement shall be taken at the center on the trailing edge of the paper.*

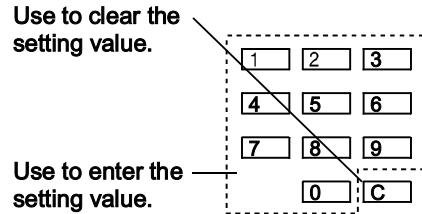
Specification	Adjust Mode	Setting Range
$3.0 \pm 1.0 \text{ mm}$	Trail Edge Erase	0 to 5

*This adjustment must be made after the PH Unit has been replaced and following Registration (CD/FD).*

### Adjustment Procedure

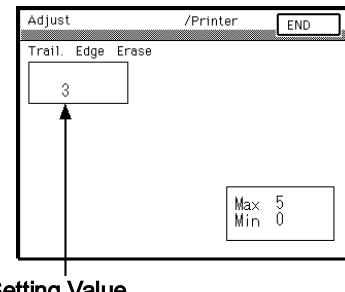
1. Call the Adjust mode to the screen.
2. Touch [Printer].
3. Touch [Trail Edge Erase].
4. Press the Start Key to let the copier produce a test pattern.
5. Check to see if width A on the test pattern is up to the specifications. If it is outside the specified range, perform the following adjustment steps.

6. Press the Clear key to clear the current setting value.



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7. Use the 10-key pad to change the setting value.



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#### Setting Instructions

If width A is longer than the specifications, make the setting value smaller than the current one.

If width A is shorter than the specifications, make the setting value greater than the current one.

- 
8. Press the Start key to let the copier produce a test pattern.
  9. Check to see if width A on the test pattern is up to the specifications.  
If it is outside the specified range, change the setting value and make a check again.
  10. If width A falls within the specified range, touch [END] to validate the setting value.

## (9) Loop Adjustment

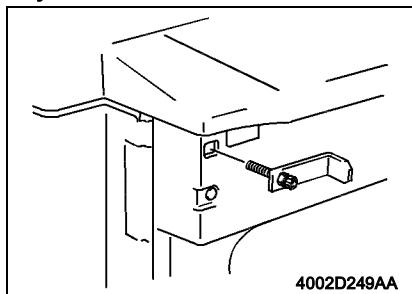
### Requirement

Adjust so that a correct loop is formed at part A when paper is fed through.

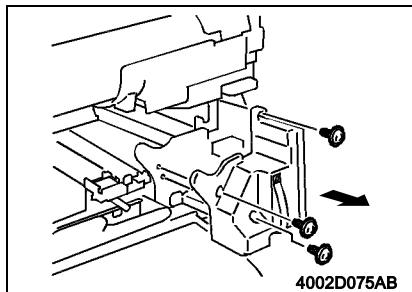
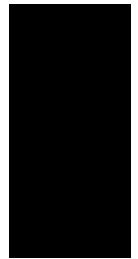
Specification	Adjust Mode	Setting Range
Approx. 4.0 mm (visual)	Loop Adjustment	-3 to +3

*This adjustment is to be made when any of the following symptoms occurs: variation in the amount of print leading edge void, paper skew, folded edge, and misfeed.*

### Adjustment Procedure



1. Swing down the Front Door and fit the Front Door Interlock Switch Actuating Jig.

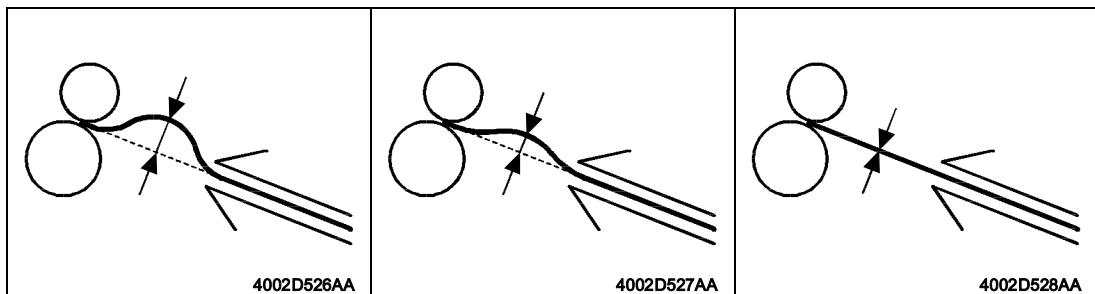


2. Remove three screws and the Cover.

**NOTE**

*Do not remove the belt mounting screw on the cover.*

3. Press the Start Key to let the copier take up and feed a sheet of paper and visually check that a correct loop is formed at part A of the location shown below.



Advanced

The loop length is too long causing the paper to have too much slack.

Correct

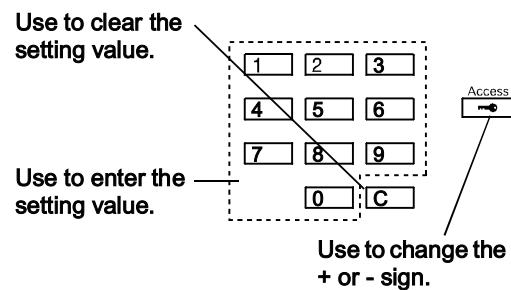
A good length of loop is formed as the paper moves into the Synchronizing Rollers.

Retarded

No loop is formed causing the paper to be taut.

If the loop length falls outside the specified range, perform the following adjustment steps.

4. Call the Adjust mode to the screen.
5. Touch [Printer].
6. Touch [Loop Adjustment].
7. Touch [Drawer].
8. Press the Clear key to clear the current setting value.



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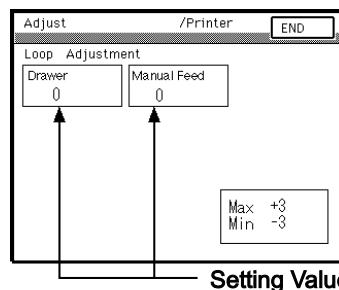
9. Use the 10-key pad to change the setting value.

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**NOTE**

Use the Access key to select the sign of + or -.

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**Setting Instructions**

If the loop length is longer than the specifications, decrease the setting value.

If the loop length is shorter than the specifications, increase the setting value.

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10. Touch [END] to validate the setting value.
11. Go back to the Basic screen.
12. Press the Start key and check for the loop length again.
13. If the loop length falls outside the specified range, change the setting value and make a check again.
14. Place a sheet of paper on the Multi Bypass Tray.
15. Following the same procedures, make the loop adjustment for the Multi Bypass Tray.

## (10) Erasure Width

### Requirement

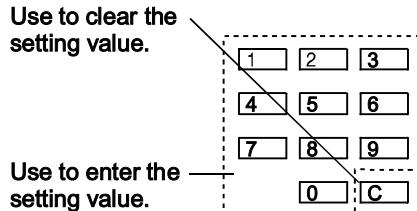
Adjust so that no shade of the Original Scale is produced on the sample copy.

Adjust Mode	Setting Range
Erasure Width	0 to 5

*This adjustment must be made when a shadow is produced from the Original Scale.*

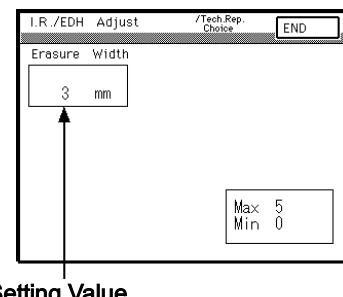
### Adjustment Procedure

1. Call the Tech. Rep. mode to the screen.
2. Touch [I.R. (EDH) Check].
3. Touch [Tech. Rep. Choice].
4. Touch [Erasure Width].
5. Press the Clear key to clear the current setting value.



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6. Using the 10-Key Pad, set "3" for Erasure Width.



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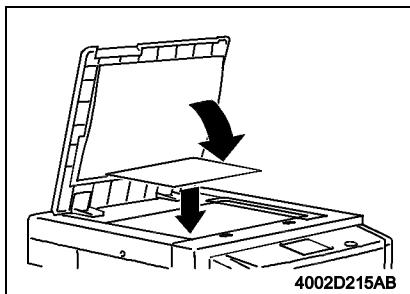
7. Touch [END] to validate the setting value.
8. Go back to the Basic screen.
9. Set Lead Edge Erase to 0.

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### NOTE

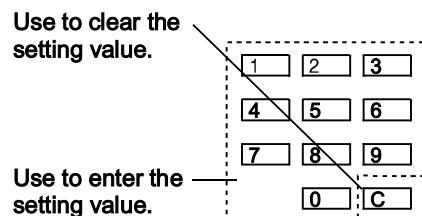
*Be sure to record to current setting value.*

10. Go back to the Basic screen.



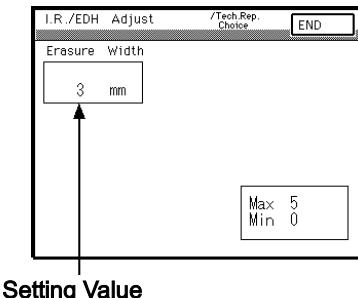
11. Place a sheet of A3 or 11 × 17 paper on the Original Glass and lower the Original Cover.
12. Make a copy in the full size (× 1.000) mode.
13. Check to see if a shadow of the Original Scale is produced on the sample copy.  
If no shadow is produced, return Lead Edge Erase to the value which has been recorded.  
If a shadow is produced, perform the following adjustment steps.

14. Call the Tech. Rep. mode to the screen.
15. Touch [I.R. (EDH) Check].
16. Touch [Tech. Rep. Choice].
17. Touch [Erasure Width].
18. Press the Clear key to clear the current setting value.



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19. Use the 10-key pad to change the setting value.



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20. Touch [END] to validate the setting value.
21. Go back to the Basic screen.
22. Make another sample copy for rechecking.  
If a shadow from the Original Scale is produced, try another setting value and check again.  
If no shadow is produced, return Lead Edge Erase to the value which has been recorded.

## (11) Zoom (CD)

### Requirement

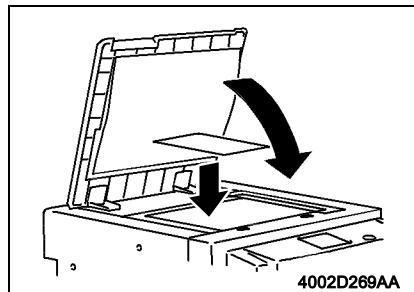
Adjust to eliminate any difference in width between the original test pattern and a test pattern copy.

Adjust Mode	Setting Range
Zoom (CD)	0.990 to 1.010

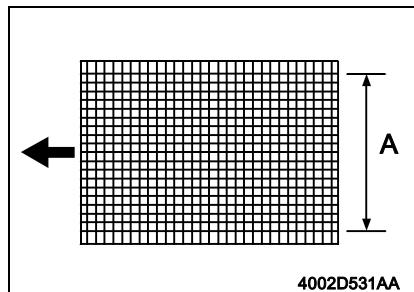
*This adjustment must be made when the CCD Unit has been replaced.*

### Adjustment Procedure

1. Call the Tech. Rep. mode to the screen.
2. Touch [Function].
3. Touch [Printer].
4. Touch [F12 Test Pattern].
5. Touch [F12-3 (64-dot checkered)].
6. Select the paper source loaded with A4 crosswise or Letter crosswise paper.
7. Press the Start key, and without any delay, press the Stop key to let the copier produce a test pattern.
8. Go back to the Basic screen.

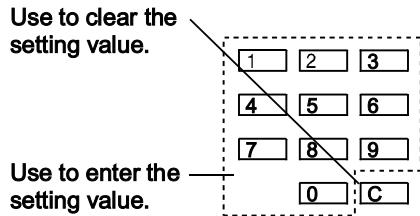


9. Place the test pattern on the Original Glass and lower the Original Cover.
10. Make a copy in the full size ( $\times 1.000$ ) mode.



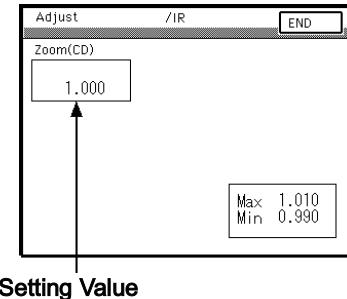
11. Measure width A on the original test pattern and the copy of the test pattern and find any difference between the two measurements.  
If there is any difference, perform the following adjustment steps.

12. Call the Adjust mode to the screen.
13. Touch [IR].
14. Touch [Zoom (CD)].
  
15. Press the Clear key to clear the current setting value.



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16. Use the 10-key pad to change the setting value.



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#### **Setting Instructions**

If width A on the test pattern copy is greater than that on the original test pattern, decrease the setting value.

If width A on the test pattern copy is smaller than that on the original test pattern, increase the setting value.

17. Touch [END] to validate the setting value.
18. Go back to the Basic screen.
19. Perform steps 9 and 10.
20. Check for any difference in width A between the original test pattern and the test pattern copy.  
If there is any difference, try another setting value for rechecking.

## (12) Zoom (FD)

### Requirement

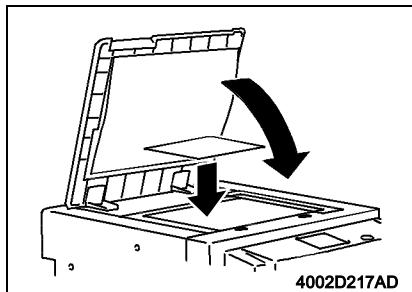
Adjust to eliminate any difference in width between the original test pattern and a test pattern copy.

Adjust Mode	Setting Range
Zoom (FD)	0.990 to 1.010

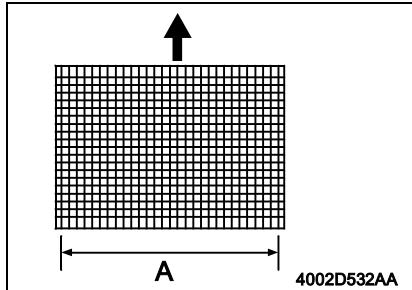
*This adjustment must be made when the Scanner Drive Cable has been replaced.*

### Adjustment Procedure

1. Call the Tech. Rep. mode to the screen.
2. Touch [Function].
3. Touch [Printer].
4. Touch [F12 Test Pattern].
5. Touch [F12-3 (64-dot checkered)].
6. Select the paper source loaded with A4 lengthwise or Letter lengthwise paper.
7. Press the Start key, and without any delay, press the Stop key to let the copier produce a test pattern.
8. Go back to the Basic screen.

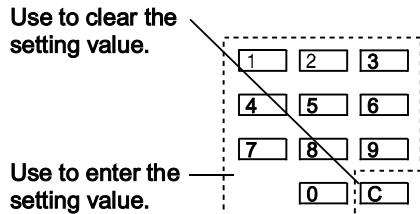


9. Place the test pattern on the Original Glass and lower the Original Cover.
10. Make a copy in the full size ( $\times 1.000$ ) mode.



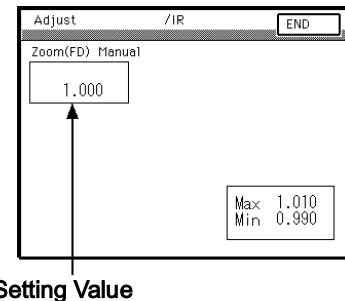
11. Measure width A on the original test pattern and the copy of the test pattern and find any difference between the two measurements.  
If there is any difference, perform the following adjustment steps.

12. Call the Adjust mode to the screen.
13. Touch [IR].
14. Touch [Zoom (FD)].
  
15. Press the Clear key to clear the current setting value.



4002D519AA

16. Use the 10-key pad to change the setting value.



4002D535CA

#### **Setting Instructions**

If width A on the test pattern copy is greater than that on the original test pattern, decrease the setting value.

If width A on the test pattern copy is smaller than that on the original test pattern, increase the setting value.

17. Touch [END] to validate the setting value.
18. Go back to the Basic screen.
19. Perform steps 9 and 10.
20. Check for any difference in width A between the original test pattern and the test pattern copy.  
If there is any difference, try another setting value for rechecking.

## (13) Scale (CD)

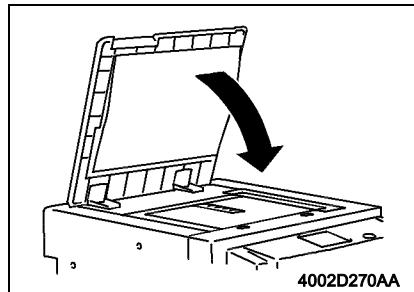
### Requirement

Adjust so that the leading edge of the image of the scale on the copy sample meets the requirements.

Adjust Mode	Setting Range
Scale (CD)	-10.0 to +10.0

*This adjustment must be made when the CCD Unit or Original Glass has been replaced.*

### Adjustment Procedure



1. Place a scale on the Original Glass so that it runs parallel with the Original Width Scale and its leading edge is aligned with the Original Length Scale.



2. Set Registration (CD) to +8.2.

☞ D-89

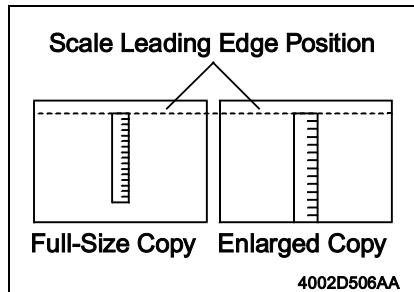
3. Set Erasure Width to 0.

☞ D-99

### NOTE

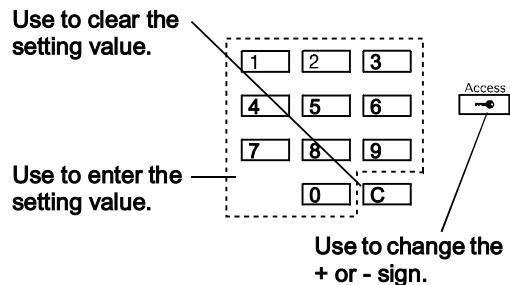
Be sure to record the current setting value.

4. Go back to the Basic screen.
5. Select the paper source that has been checked for "Registration (CD)."
6. Make a copy in the full size ( $\times 1.000$ ) mode.
7. Make a copy at an enlargement ratio (e.g.:  $\times 1.414$ ).



8. Check to see if the leading edge of the scale is reproduced on the full-size copy.
9. Check to see if the position of the leading edge of the scale reproduced on the enlarged copy does not deviate from that on the full-size copy.  
If the conditions of steps 8 and 9 are met, return Registration (CD) and Erasure Width to the values recorded.  
If conditions of steps 8 and 9 are not met, perform the following adjustment steps.

10. Call the Adjust mode to the screen.
11. Touch [IR].
12. Touch [Scale (CD)].
  
13. Press the Clear key to clear the current setting value.



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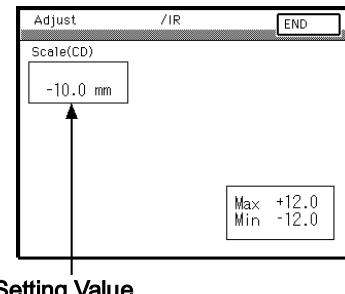
14. Use the 10-key pad to change the setting value.

---

**NOTE**

*Use the Access key to select the sign of + or -.*

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4002D536CA

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**Setting Instructions**

If the position of the leading edge of the scale reproduced on the enlarged copy deviates from that on the full-size copy, decrease the setting value.  
 If the leading edge of the scale is not reproduced on the full-size copy, increase the setting value.

---

15. Go back to the Basic screen.
16. Perform steps 5 through 9.
17. Check to see if conditions of steps 8 and 9 are met.  
 If the conditions are not met, try another setting value for rechecking.
18. If the conditions are met, return Registration (CD) and Erasure Width to the values recorded.

## (14) Scale (FD)

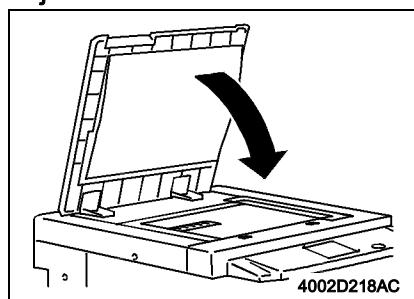
### Requirement

Adjust so that the leading edge of the image of the scale on the copy sample meets the requirements.

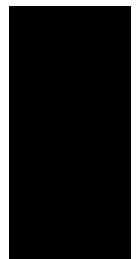
Adjust Mode	Setting Range
Scale (FD)	-7.0 to +7.0

*This adjustment must be made when the Scanner has been removed the Scanner Drive Cable or Original Glass has been replaced.*

### Adjustment Procedure



1. Place a scale on the Original Glass so that it runs parallel with the Original Length Scale and its leading edge is aligned with the Original Width Scale.



2. Set Lead Edge Erase to 0.

☞ D-93

3. Set Registration (FD) to +8.2.

☞ D-91

4. Set Erasure Width to 0.

☞ D-99

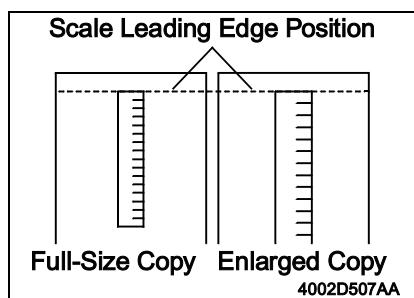
### NOTE

Be sure to record the current setting value.

5. Go back to the Basic screen.

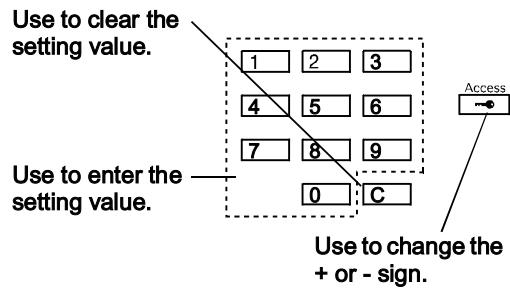
6. Make a copy in the full size ( $\times 1.000$ ) mode.

7. Make a copy at an enlargement ratio (e.g.:  $\times 1.414$  or  $\times 1.290$ ).



8. Check to see if the leading edge of the scale is reproduced on the full-size copy.
9. Check to see if the position of the leading edge of the scale reproduced on the enlarged copy does not deviate from that on the full-size copy.  
If the conditions of steps 8 and 9 are met, return Lead Edge Erase, Registration (FD), and Erasure Width to the values recorded.  
If conditions of steps 8 and 9 are not met, perform the following adjustment steps.

10. Call the Adjust mode to the screen.
11. Touch [IR].
12. Touch [Scale (FD)].
  
13. Press the Clear key to clear the current setting value.



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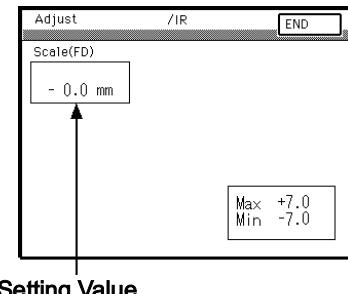
14. Use the 10-key pad to change the setting value.

---

**NOTE**

*Use the Access key to select the sign of + or -.*

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**Setting Instructions**

If the position of the leading edge of the scale reproduced on the enlarged copy deviates from that on the full-size copy, decrease the setting value.  
If the leading edge of the scale is not reproduced on the full-size copy, increase the setting value.

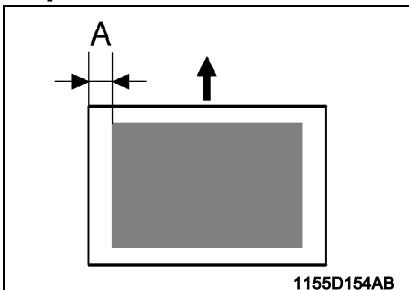
---

15. Go back to the Basic screen.
16. Perform steps 6 through 9.
17. Check to see if conditions of steps 8 and 9 are met.  
If the conditions are not met, try another setting value for rechecking.
18. If the conditions are met, return Lead Edge Erase, Registration (FD), and Erasure Width to the values recorded.

## 3-8. OTHER ADJUSTMENTS

### (1) Adjustment of the Reference Position of Each Drawer

#### Requirement



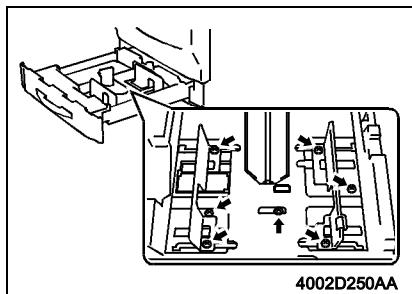
Width A on the test pattern output should fall within the following range.

Specification
$5 \pm 0.5 \text{ mm}$

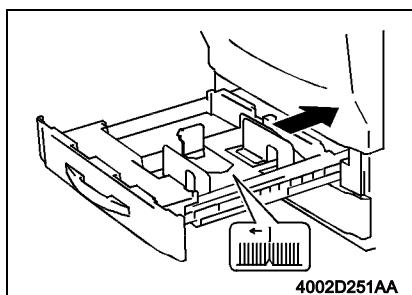
*The adjustment should be made after Registration (CD/FD).*

#### Adjustment Procedure

1. Call the Adjust mode to the screen.
2. Touch [Printer].
3. Touch [Registration (CD)].
4. Select the paper source to be checked and adjusted.
5. Press the Start Key to let the copier produce a test pattern.
6. Check to see if width A on the test pattern is up to the specifications. If it is outside the specified range, perform the following adjustment steps.



7. Slide out the drawer used as the paper source for the test pattern and then loosen the seven screws shown on the left.



8. Watching the scale on the adjustment plate in the drawer, move the Edge Guide.

---

#### **Setting Instructions**

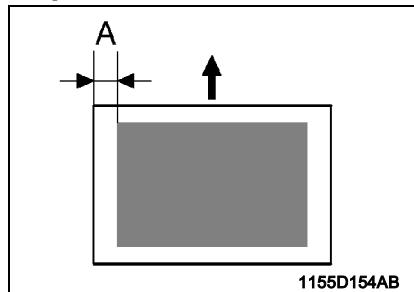
If width A on the test pattern is greater than the specifications, move the Edge Guide to the rear.

If width A on the test pattern is smaller than the specifications, move the Edge Guide to the front.

9. Press the Start key to let the copier produce a test pattern.
10. Check to see if width A on the test pattern is up to specifications.  
If the width falls outside the specified range, move the Edge Guide as necessary and check again.
11. Following the same procedures, make the adjustment for all drawers.

## (2) Adjustment of the Reference Position of the Multi Bypass Tray

### Requirement



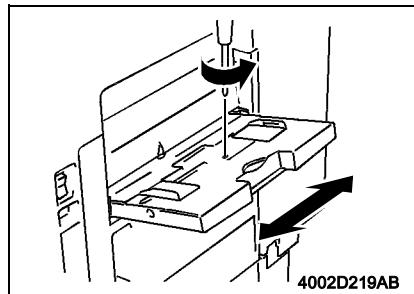
Width A on the test pattern output should fall within the following range.

Specification
$5 \pm 0.5 \text{ mm}$

*The adjustment should be made after Registration (CD/FD).*

### Adjustment Procedure

1. Place a sheet of paper on the Multi Bypass Tray.
2. Call the Adjust mode to the screen.
3. Touch [Printer].
4. Touch [Registration (CD)].
5. Touch [Manual].
6. Press the Start Key to let the copier produce a test pattern.
7. Check to see if width A on the test pattern is up to the specifications. If it is outside the specified range, perform the following adjustment steps.



8. Loosen one screw that secures the Multi Bypass Tray in position and move the tray as necessary.

### Setting Instructions

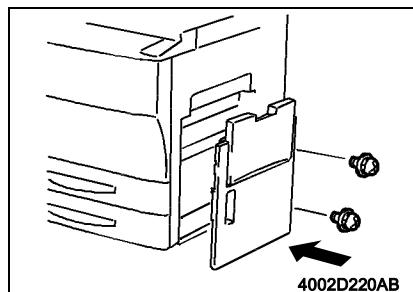
If width A on the test pattern is greater than the specifications, move the Multi Bypass Tray to the rear.

If width A on the test pattern is smaller than the specifications, move the Multi Bypass Tray to the front.

9. Press the Start key to let the copier produce a test pattern.
10. Check to see if width A on the test pattern is up to specifications.  
If the width falls outside the specified range, move the tray as necessary and check again.

### (3) Adjustment of the Upper Right Door (Multi Bypass Unit)

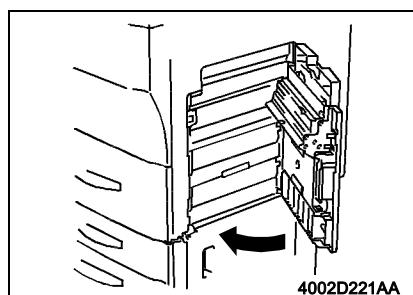
If the Right Door has been removed and reinstalled, the position of the actuator of Upper Right Door Set Sensor may deviate from the correct position. Hence, the necessity of the following adjustment.



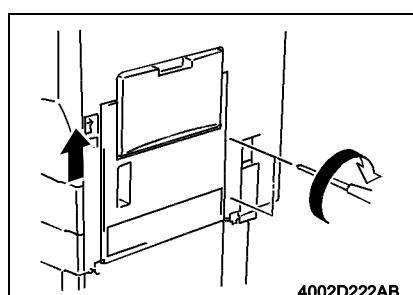
1. Mount the Upper Right Door with two screws.

**NOTE**

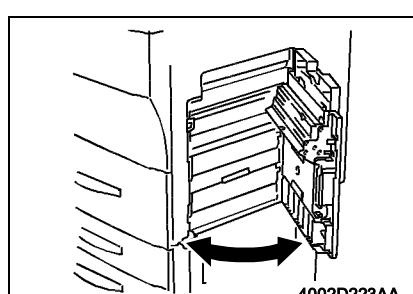
*At this time, only temporarily tighten these screws.*



2. Lightly close the Upper Right Door Set Sensor actuator will not contact the frame.



3. Due to its own weight, the front end of the Upper Right Door tends to hang lower. Lifting the front end slighting the two mounting screws.



4. Open and close the Upper Right Door two to three times to make sure that the actuator of the Upper Right Door Set Sensor does not contact the frame.

#### (4) Adjustment of the Position of the Scanner and 2nd/3rd Mirrors Carriage

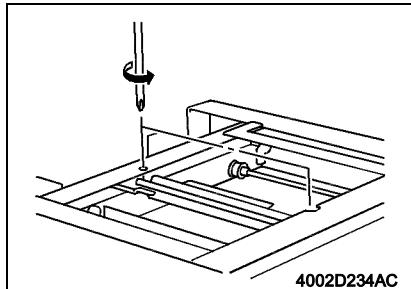
##### Requirement

With the Scanner fixed to the Scanner Drive Cables, there should be no gap between the Scanner/Mirrors Carriage Positioning Jig and the Scanner and also between the Scanner/Mirrors Carriage Positioning Jig and the 2nd/3rd Mirror Carriage.

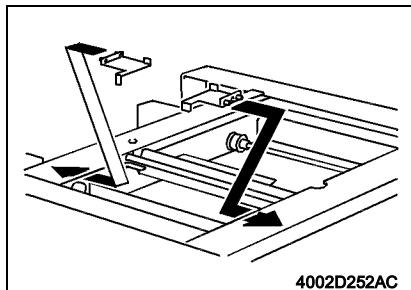
*Make this adjustment after either of the following procedures have been performed:*

- *After the Scanner Drive Cable has been replaced.*
- *When the Scanner Fixing Bracket has been removed from Scanner Drive Cable.*
- *When the Scanner Drive Cable comes unwound.*

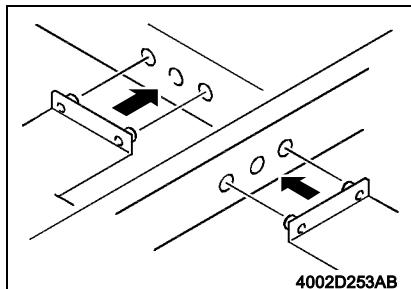
##### Adjustment Procedure



1. Remove the Original Glass and Rear Upper Cover.
2. Move the Scanner so that the Scanner Positioning Screw is aligned with the hole in the upper frame.
3. Insert a screwdriver into the hole in the upper frame and loosen the Scanner Positioning Screw (so that the Scanner Drive Cables and the Scanner can be moved independently of each other).

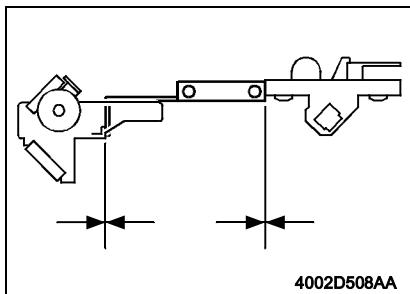


4. Install the Scanner Positioning Jigs between the Scanner and the 2nd/3rd Mirrors Carriage Assy.

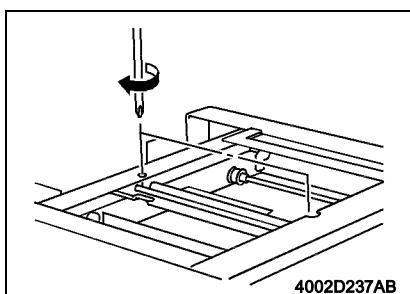


##### NOTE

*When installing the Scanner Positioning Jigs, be sure to fit the tabs on the jigs into the holes at the front and rear ends of the frame.*

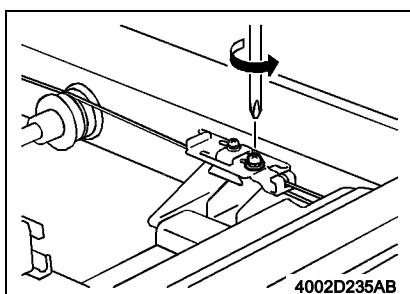


5. Press the Scanner and the 2nd/3rd Mirrors Carriage Assy tightly up against the Scanner Positioning Jigs.
6. Check that there is no clearance between the Scanner and the Scanner Positioning Jig, and between the 2nd/3rd Mirrors Carriage Assy and the Scanner Positioning Jig.  
If there is any clearance, adjust parallel alignment of the 2nd/3rd Mirrors Carriage Assy after this adjustment has been completed.

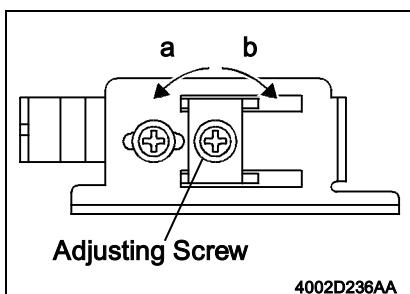


7. Tighten the two Scanner Positioning Screws.

## (5) Adjustment of the 2nd/3rd Mirrors Carriage Assy for Parallel Alignment



1. Remove the Original Glass.
2. Loosen one screw that secures the adjusting plate.



3. Turn the adjusting screw as necessary.

### Setting Instructions

If there is a gap between the 2nd/3rd Mirrors Carriage Assy and the Scanner Positioning Jig at the front, turn the adjusting screw clockwise.

If there is a gap between the 2nd/3rd Mirrors Carriage Assy and the Scanner Positioning Jig in the rear, turn the adjusting screw counterclockwise.

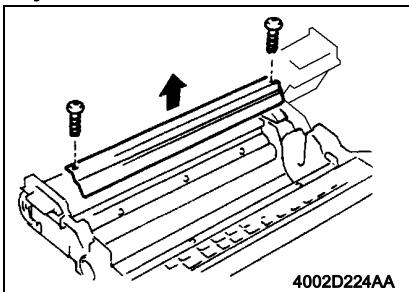
4. Lightly press the 2nd/3rd Mirrors Carriage Assy up against the Scanner Positioning Jig and check that there is no clearance between the two.
5. Tighten one screw to secure the adjusting plate in position.

## (6) Adjustment of the Gap Between the Doctor Blade and Sleeve Roller (D.B. Adjustment)

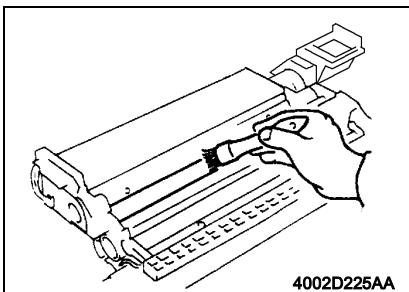
### Requirement

The gap between the Doctor Blade and Sleeve Roller should be  $0.6 + 0.03 - 0.05$  mm.

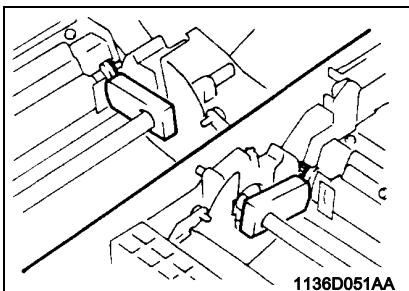
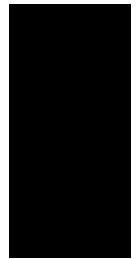
### Adjustment Procedure



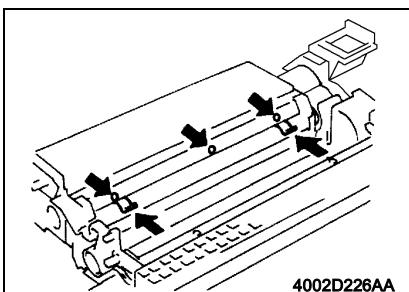
1. Slide out the Developer Unit and remove the PC Drum Charge Corona and PC Drum.
2. Remove two screws and the Developer Scattering Prevention Plate.



3. Using a brush, whisk developer off the surface of the Sleeve Roller.



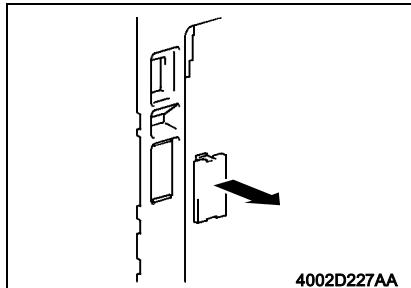
4. Install the Sleeve/Magnet Roller Positioning Jig into the Developer Unit.



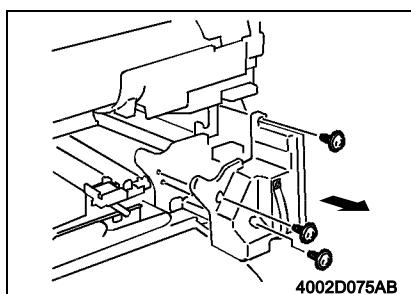
5. Loosen three screws that secure the Doctor Blade. Insert the D.B. Adjusting Jigs between the Doctor Blade and Sleeve Roller.
6. Press down the Doctor Blade until it positively contacts the D.B. Adjusting Jigs. Then, tighten the three screws to secure the Doctor Blade.

## 4. MISCELLANEOUS

### 4-1. INSTALLATION OF THE KEY COUNTER SOCKET (OPTION)



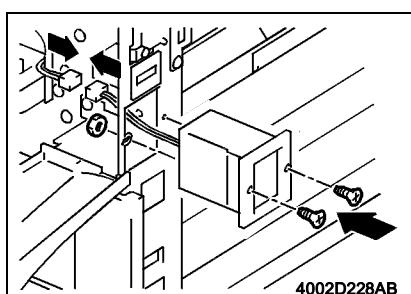
1. Remove the Right Cover.
2. Remove the Counter Cover.



3. Swing down the Front Door and slide out the Developer Unit.
4. Remove three screws and the cover.

**NOTE**

*Do not remove the belt mounting screw on the cover.*



5. Connect the Key Counter Socket connector.
6. Using one screw and nut, secure the counter socket.

**NOTE**

*When the Key Counter Socket is mounted, set to "ON" the "Key Counter" available from the Security mode.*

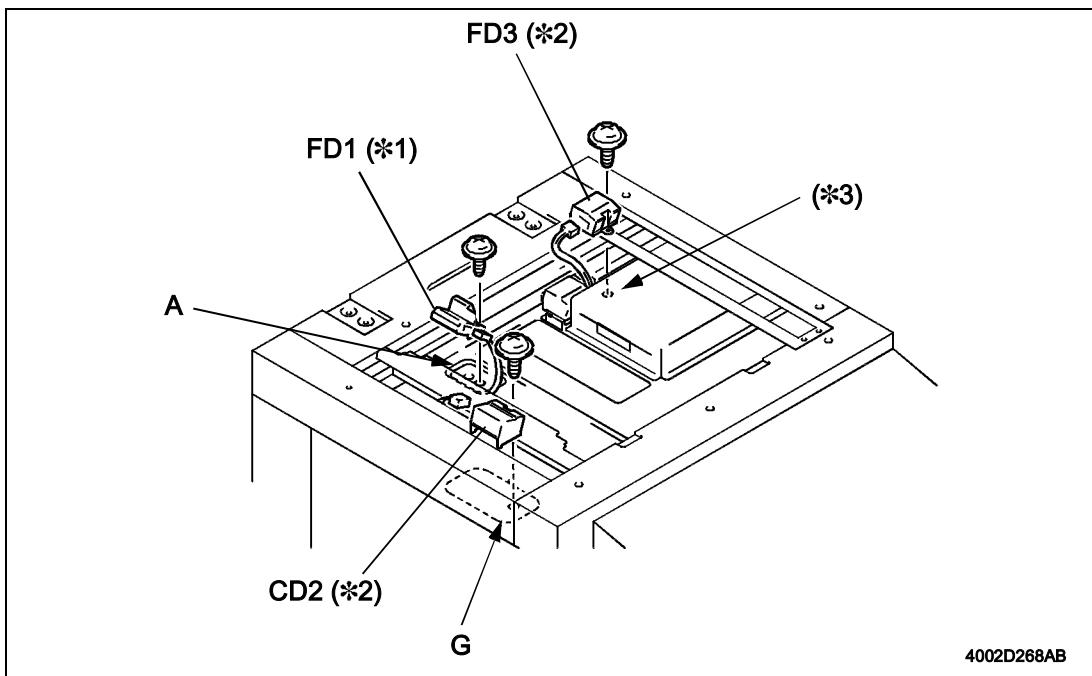
## 4-2. MOUNTING THE ORIGINAL SIZE DETECTING SENSORS (OPTION)

### NOTE

When an Original Size Detecting Sensor has been added, turn "ON" "Original Size Detecting Option" of "System Input" under the Tech. Rep. mode and make the "Orig. Size Adjustment."

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1. Remove the Original Glass and EDH Glass.
2. Install the Original Size Detecting Sensor.



\* 1: Standard for the Except U.S.A., Canada

\* 2: Standard for the Other Areas (Except Korea, Taiwan)

\* 3: Mount the sensor in hole D for Korea and Taiwan.

Mount it in hole E for areas other than Korea and Taiwan.

### 4-3. FLASH MEMORY

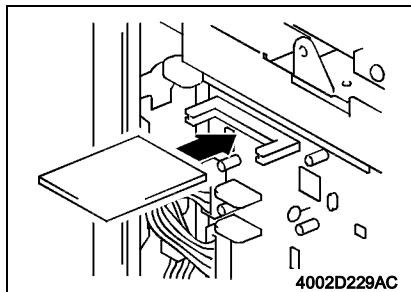
Software has conventionally been upgraded by replacing ROM on each board. This copier employs flash memory for the system control IC mounted on the Master Board and Image Processing Board. Its contents are reprogrammed easily by performing the following steps using the IC card (memory card), into which data has been previously downloaded.

#### NOTES

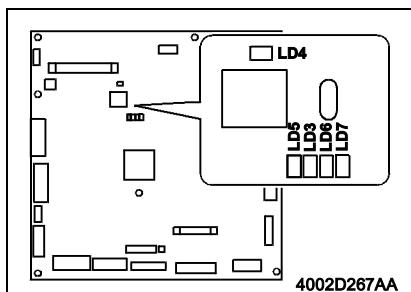
- NEVER remove or insert the memory card with the copier power turned ON.
- An error code appears on the Touch Panel while data is being rewritten. It does not, however, indicate any problematic symptom and can be ignored.

#### (1) Rewriting the Master Board Data

1. With the Power Switch in the OFF position, unplug the power cord from the power outlet.
2. Remove the Rear Cover.



3. Insert the memory card into the Master Board.



4. Plug the power cord into the power outlet.
5. Turn ON the Power Switch.
6. This starts the data rewriting sequence.

#### NOTE

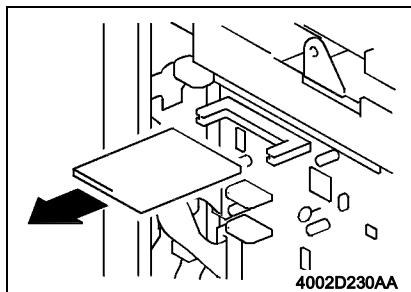
While the data is being rewritten, LD3 on the Master Board remains blinking and LD4 remains OFF.

7. Check that LD3 and LD4 on the Master Board turn ON.
8. Unplug the power cord from the power outlet.

#### NOTE

Do not turn OFF the Power Switch at this time.

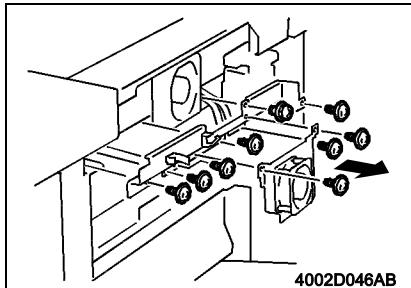
9. Remove the memory card.



10. Turn OFF the Power Switch.
11. Plug the power cord into the power outlet.
12. Turn ON the Power Switch.
13. Call the Tech. Rep. Mode to the screen.
14. Touch [ROM Version].
15. Check to see if the printer version shown on the screen matches the version marked on the flash memory.

## (2) Rewriting the Image Processing Board Data

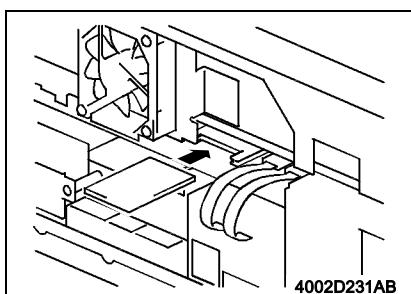
1. With the Power Switch in the OFF position, unplug the power cord from the power outlet.
2. Remove the Right Cover.
3. Close the Front Cover.



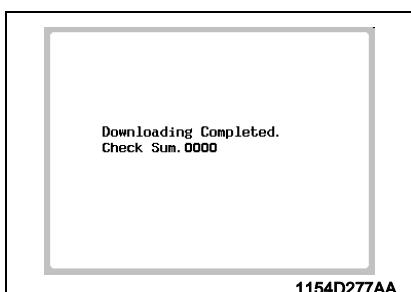
4. Remove three screws and the PH Cooling Fan Motor mounting bracket Assy.

### **NOTE**

*Do not disconnect the connector of the PH Cooling Fan Motor.*



5. Remove six screws and the mounting bracket.



6. Insert the memory card into the Image Processing Board.

7. Plug the power cord into the power outlet.

8. Holding down the particular numeric key of the 10-Key Pad corresponding to the language in which the data is to be rewritten, turn ON the Power Switch.

### **NOTE**

*For the specific numeric key of the 10-Key Pad, refer to the "List of Numeric Keys Corresponding to Languages."*

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9. The data rewriting sequence starts.  
(The Start key starts blinking red.)

10. Check that a message appears on the Touch Panel, indicating that the data has been rewritten correctly.  
(The Start key lights up green steadily.)



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**Check Items**

- “Downloading Completed.” is shown.
  - The number shown to the left of “Language” matches that entered from the 10-Key Pad when the Power Switch is turned ON.
  - The Check Sum value matches the value given on the memory card.
- 

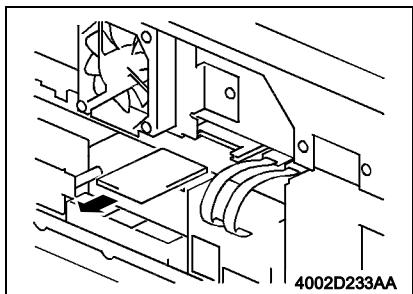
11. If rewriting has been NG (as indicated by the Start key lighting up red), perform steps 12 and 13 and then start the procedure over, beginning with step 5.

---

**NOTE**

*If the second rewriting fails, perform steps 12 and 13 and abandon the procedure.*

---



12. Unplug the power cord from the power outlet.

---

**NOTE**

*At this time, do not turn OFF the Power Switch.*

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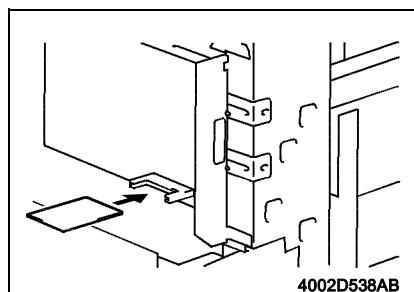
13. Remove the memory card.

**<List of Numeric Keys Corresponding to Languages>**

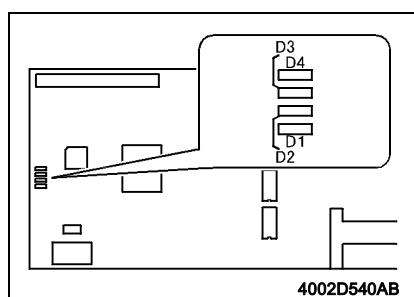
10-Key Pad	None pressed		1	2	3	4
Marketing Areas	U.S.A. and Canada	Europe 1	Europe 2	Europe 3	Other Areas 1	Other Areas 2
Languages	English	English	English	English	English	English
	French	German	Ukrainian	Czech	Spanish	Chinese 1
	Spanish	French	Lithuanian	Slovak	Portuguese	Chinese 2
	Japanese	Dutch	Estonian	Turkish	French	Japanese
		Italian	Hungarian	French	Russian	
		Spanish	Romanian	German	Thai	
		Portuguese	Polish	Greek	Malay	
		Danish	Croatian	Chinese	Indonesian	
		Norwegian	German	Arabic	Arabic	
		Swedish	Russian	Slovenian	Japanese	
		Finnish			Chinese 1	
		Japanese			Chinese 2	

### (3) Rewriting the ECC Board Data (option)

1. Unplug the power cord from the power outlet with the Power Switch OFF.
2. Remove the Rear Cover.



3. Insert the memory card into the ECC Board.



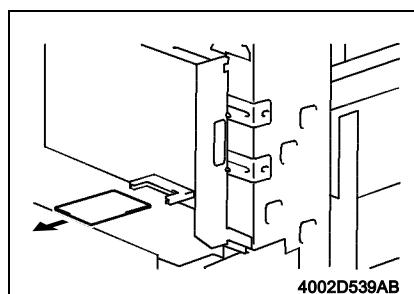
4. Plug the power cord into the power outlet.
5. Turn ON the Power Switch.
6. This starts the rewriting sequence.

---

**NOTE**

*D1 on the Master Board remains blinking while data is being rewritten.*

---



7. Check that D3 on the ECC Board turns ON.
8. If an LED other than D3 turns ON or if it takes longer than 3 min. to rewrite the data, perform steps 9 and 10, turn OFF the Power Switch, and start the procedure over beginning with step 4.

9. Unplug the power cord from the power outlet.

---

**NOTE**

*At this time, do not turn OFF the Power Switch.*

---

10. Remove the memory card.



#### (4) Rewriting the Master Board, Image Processing Board, and ECC Board (Option) Simultaneously

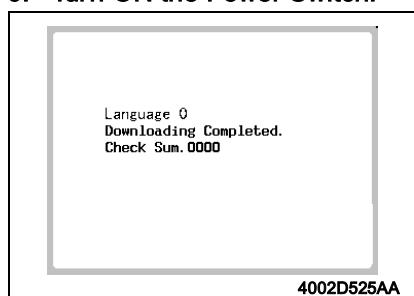
---

##### NOTE

Steps 4 and 9 are to be performed only when the ECC Board (option) is mounted.

---

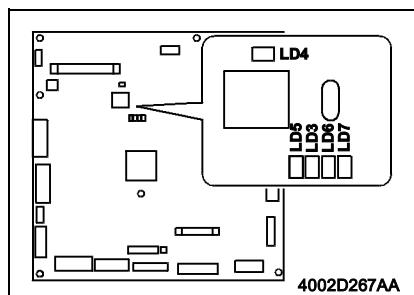
1. With the Power Switch in the OFF position, unplug the power cord from the power outlet.
2. Insert the memory card into the Image Processing Board.  
☞ D-119
3. Insert the memory card into the Master Board.  
☞ D-118
4. Insert the memory card into the ECC Board.  
☞ D-121
5. Plug the power cord into the power outlet.
6. Turn ON the Power Switch.



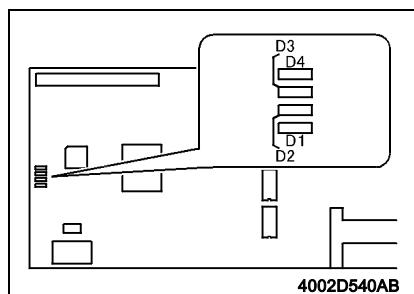
7. Check that a message appears on the Touch Panel, indicating that the data has been rewritten correctly.
- 

##### Check Items

- "Downloading Completed." is shown.
  - The number shown to the left of "Language" matches that entered from the 10-Key Pad when the Power Switch is turned ON.
  - The Check Sum value matches the value given on the memory card.
- 



8. Check that LD3 and LD4 on the Master Board are ON.



9. Check that D3 on the ECC Board turns ON.

10. Unplug the power cord from the power outlet.
- 

##### NOTE

Do not turn OFF the Power Switch at this time.

---

11. Remove the memory card.

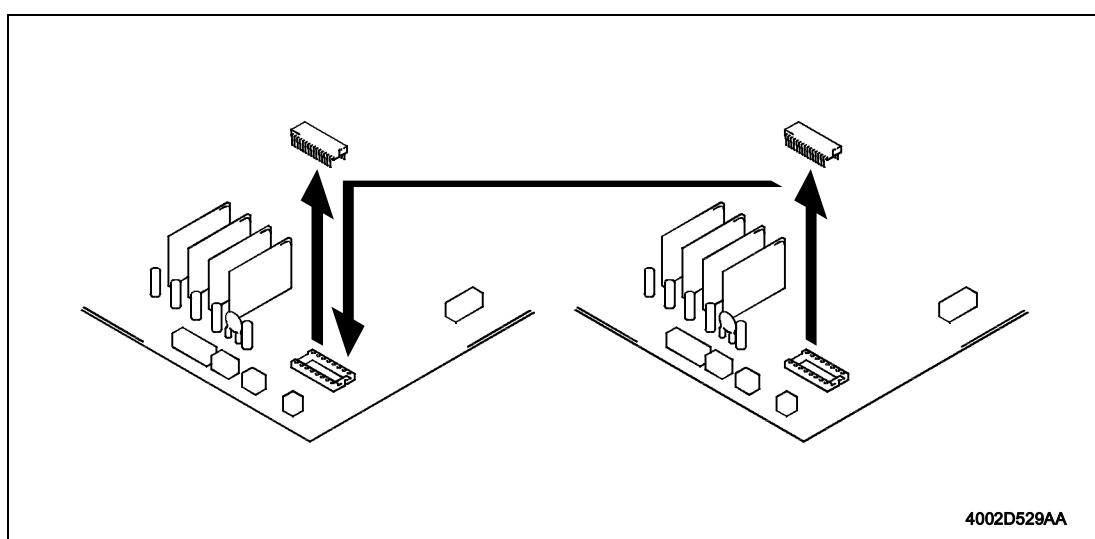
## 4-4. REMOUNTING EEPROM

### NOTE

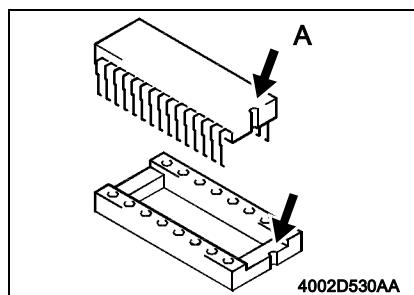
If the PW Board has replaced, be sure to remount EEPROM from the old to new PW Board.  
If the PW Board has been replaced and EEPROM has not been remounted, be sure to replace the PC Drum with a new one. EEPROM contains no data in this case, so make entries again of numeric values given on the Adjust Label.

### (1) Remounting EEPROM on the Master Board

1. Remove the Master Board.
2. Remove EEPROM (IC101) from the new Master Board.
3. Remove EEPROM (IC101) from old Master Board and remount it onto the new Master Board.



4002D529AA

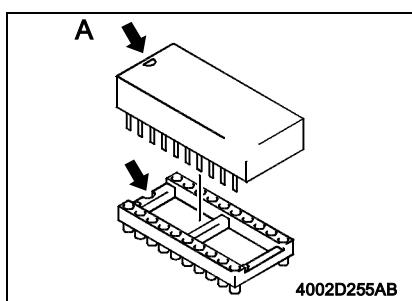
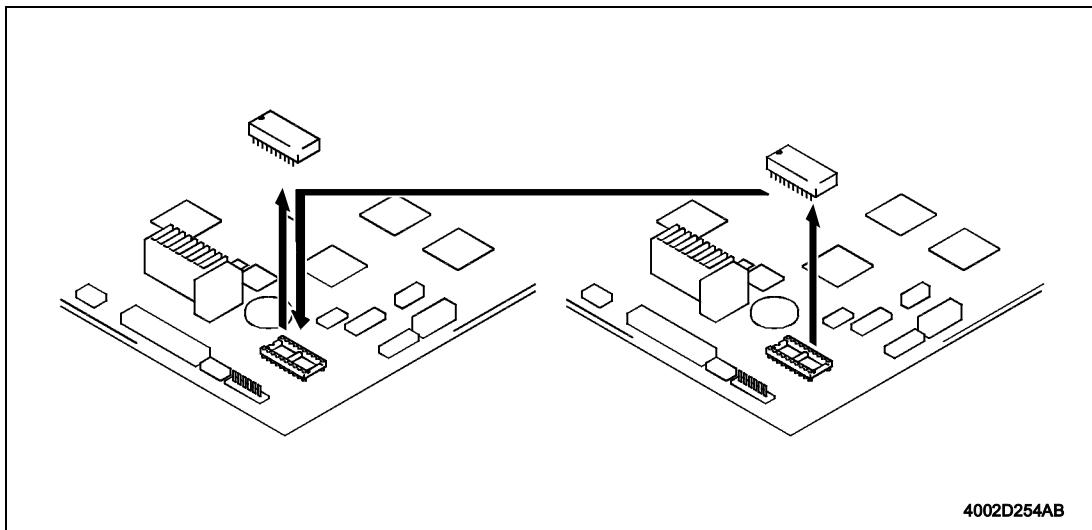


### NOTE

Note the alignment notch (A) on EEPROM (IC101) when mounting the IC.

## (2) Remounting EEPROM on the Image Processing Board

1. Remove the Image Processing Board.
2. Remove EEPROM (IC400) from the new Image Processing Board.
3. Remove EEPROM (IC400) from old Image Processing Board and remount it onto the new Image Processing Board.



---

### NOTE

*Note the alignment notch (A) on EEPROM (IC101) when mounting the IC.*

---

---

# **SWITCHES ON PWBS, TECH. REP. SETTINGS**

---

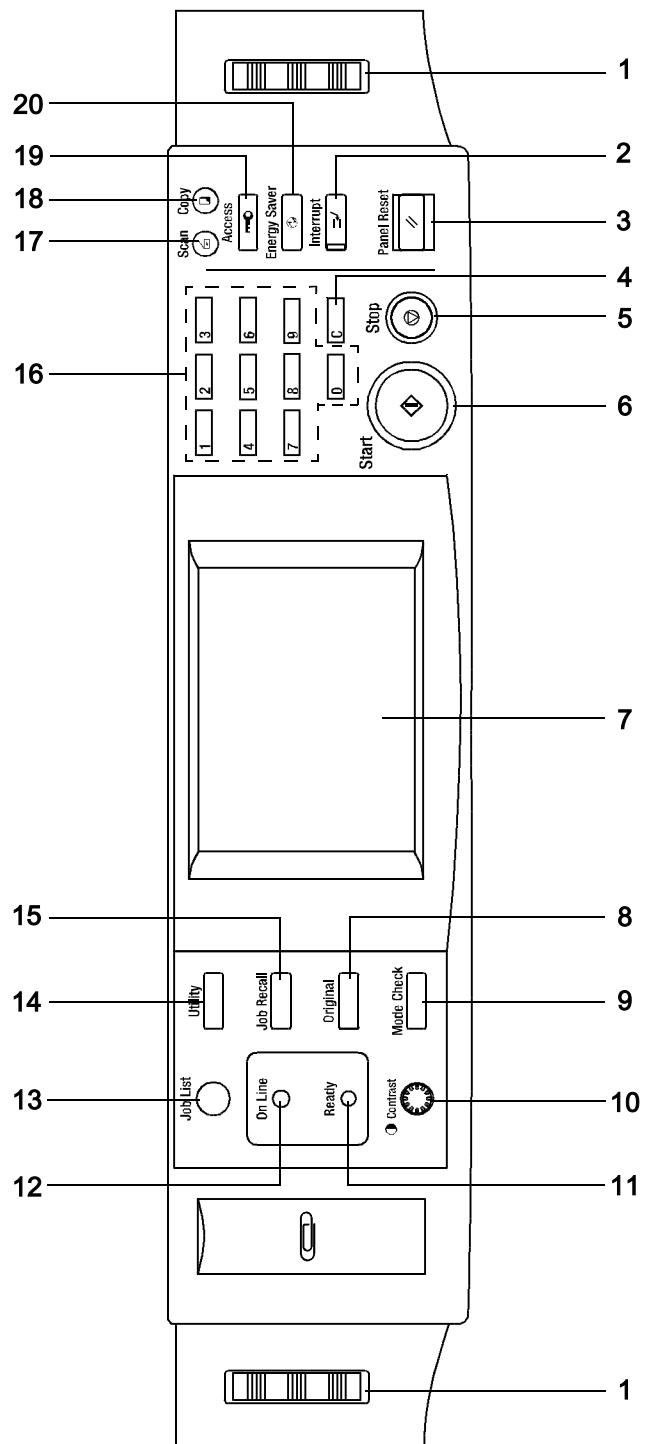


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# 1. CONTROL PANEL KEYS AND TOUCH PANEL

## 1-1. Control Panel Keys



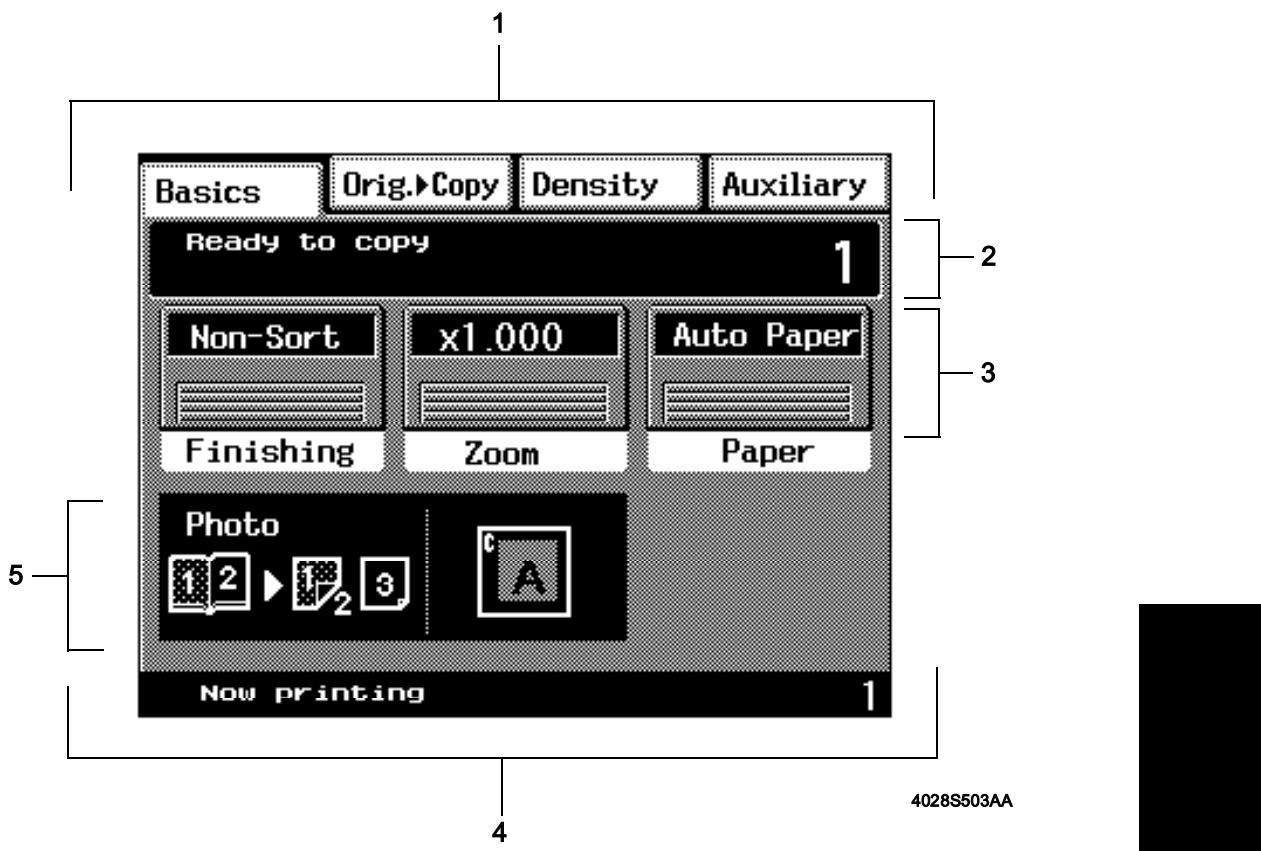
4028U003EA

1. Control Panel Adjusting Dial
  - Allows the angle of the control panel to be adjusted.
2. Interrupt Key
  - Press to select the Interrupt mode.
3. Panel Reset Key
  - Press to set the machine into the initial mode, clearing all settings made on the control panel.
4. Clear Key
  - Clear the various numeric values.
5. Stop Key
  - Stop a print cycle.
  - Stop a scanning cycle.
6. Start Key
  - Start a print cycle.
7. Touch Panel
  - Shows various screens and message.
8. Original Key
  - Press to select the Mixed Orig. Detection and other document-related functions setting screen.
9. Mode Check Key
  - Press to show the mode Check screen.
10. Display Contrast Knob
  - Use to adjust the brightness of the Touch Panel.
11. Ready Lamp
  - Lights up to indicate that data can be transferred.
  - Indicates whether the machine is connected to an external controller.
12. On Line Key
  - Press to select either Online or Offline mode.
13. Job List Key
  - Press to check for the settings made for a job (Mode Check), modify the settings of job (Change), delete a job (Delete), and unlock a job (Unlock).
14. Utility Key
  - Press to show the Utility Mode menu.
15. Job Recall Key
  - Press to show the Job Recall screen on which you can check or recall a copy-job program previously stored in memory.
16. Utility Key
  - Press to show the Utility Mode menu.
17. Scan Key
  - Press to select the Scanner mode.
18. Copy Key
  - Press to select the Copy mode.
19. Access Key
  - Press to enter the access number when Copy Track of the Administrator mode available.  
Press the access Key.
20. Energy Saver Key
  - Press to set machine into the Energy Saver mode.

## 1-2. Explanation of the Touch Panel

### (1) Basis Screen

The Basic screen is the initial screen that appears when the copier is turned ON.



#### 1. Supplementary Function Keys

- The auxiliary, Density, Orig. ▶ Copy, and Basics keys are displayed.

#### 2. Message Display

- Shows the current machine status, operating instructions and precautions, and other data including the number of copies selected and the amount of paper still available for use.

#### 3. Basic Function/Key

- Shows the basic function keys and the corresponding functions currently selected for use.

#### 4. Set Function

- Shows graphic representations of the settings currently made for Orig. ▶ Copy and Finishing.

#### 5. Sub-message Display

- Shows what is being done with the currently reserved job.

## (2) Warning Screens

The Warning screen may be a malfunction display, error display, warning display, or a caution display.

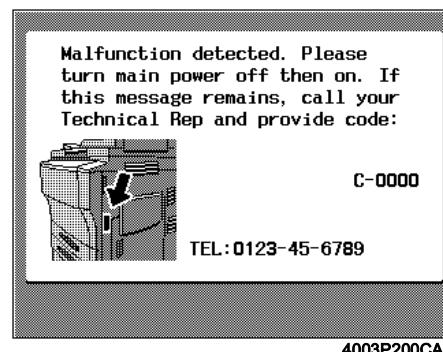
### <Malfunction Display>

Given when a malfunction occurs.

E.g.: Malfunctions that can be identified with a specific code.



4003P201CA

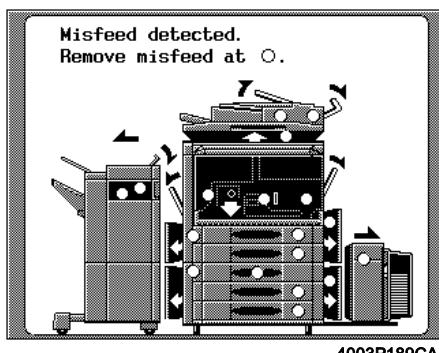


4003P200CA

### <Error Display>

Given when an error occurs.

E.g.: Paper misfeed, door open, etc.

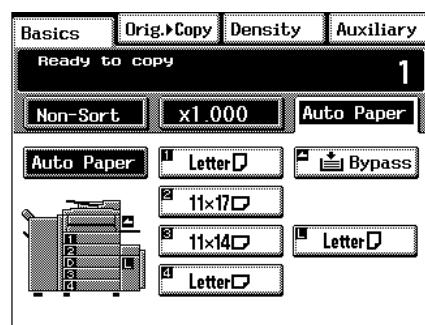


4003P189CA

### <Warning Display>

Given when only a defective copy will be produced because of erroneous or illegal panel settings.

E.g.: Unmatched paper size in Auto Paper.

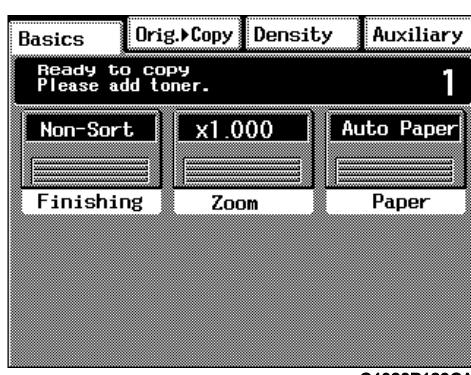


C4028P009EA

### <Caution Display>

Given when, though further copier operation will be possible, it could eventually result in a malfunction.

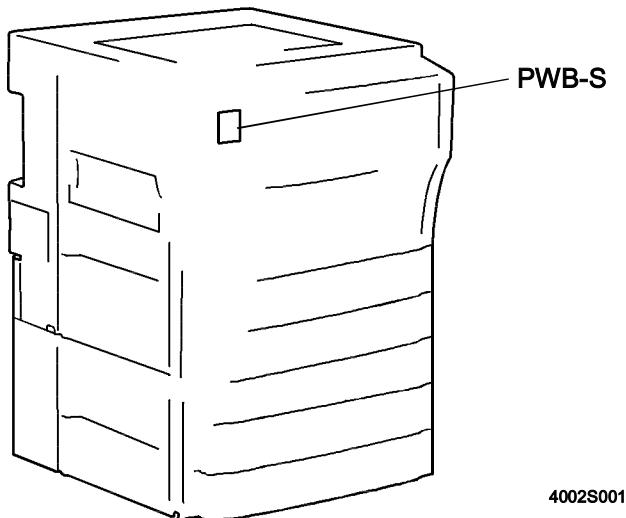
E.g.: Toner near empty, etc.



C4028P129CA

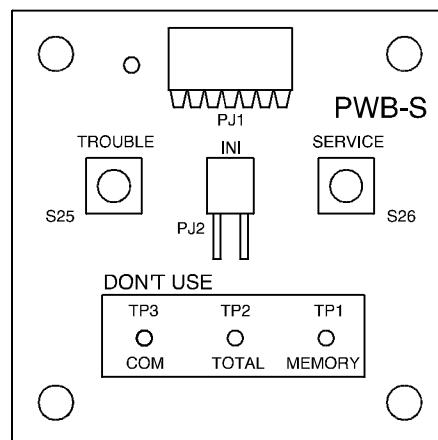
## 2. FUNCTION OF SWITCHES AND OTHER PARTS ON PWBs

### 2-1. PWB Location



4002S001AB

### 2-2. PWB-S (Tech. Rep. Setting Switches Board)



4002S002AB

Symbol	Name	Description
S25	Trouble Reset Switch	Resets the malfunction display.
S26	Tech. Rep. Switch	Display the Tech. Rep. mode screen.
PJ2	Initialize Switch	Resets a misfeed, malfunction, and erratic display.
TP1	Memory Clear Test Point	<p>Clears all data.</p> <p><b>NOTE:</b></p> <ul style="list-style-type: none"> <li>• It does not, however, clear data of Electronic counters, Adjust mode, Administrator and RD mode functions.</li> </ul>
TP3	COM Test Point	Ground used for memory clear.

## (1) Clearing Procedures

### <Initialize>

1. Turn OFF the Power Switch.
2. With the circuit across pins of PJ2 closed, turn ON the Power Switch.
3. Open the circuit in about 5 seconds.
4. Check that the message "Initialize Completed" is displayed on the Touch Panel and then touch the "OK" key.

### <Memory Clear>

1. Turn OFF the Power Switch.
2. With the circuit across TP1 and TP3 closed, turn ON the Power Switch.
3. Open the circuit in about 5 seconds.
4. Check that the message "Memory Clear Completed" is displayed on the Touch Panel and then touch the "OK" key.

---

### NOTES:

- *If the copier exhibits an erratic display or operation, reset and clear in the following order:  
Initialize → Memory Clear.*
  - *If Memory Clear has been performed, make settings of various functions once again.*
- 

## (2) Data/Conditions Cleared by Reset Switches/Pins

Clearing Method Data Cleared	Front Door Open/Close	Trouble Reset Switch S25	Initialize PJ2	Memory Clear TP1
Misfeed display	○	-	○	○
Malfunction display	Fusing/ Optical	-	○	○
	Others	○	○	○
Erratic operation/display	-	○	○	○
Job/Image	-	-	-	○
User's Choice	-	-	-	○
Tech. Rep. Mode	-	-	-	○
Security Mode	-	-	-	○

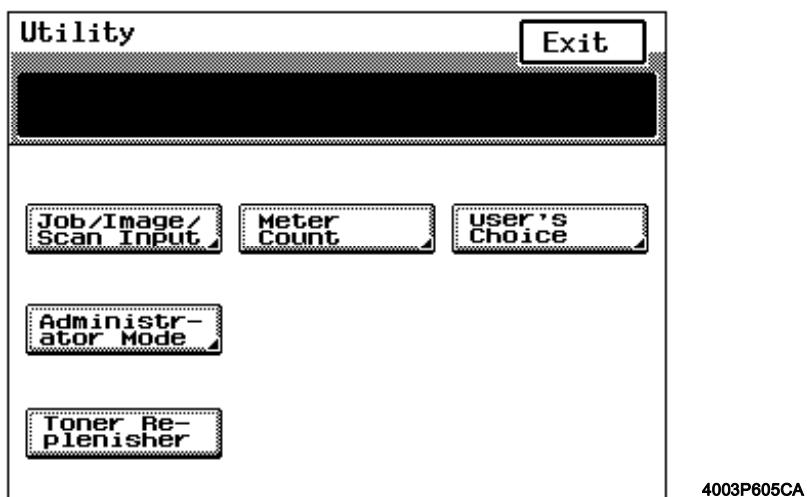
○: Cleared -: Not cleared

### 3. UTILITY MODE

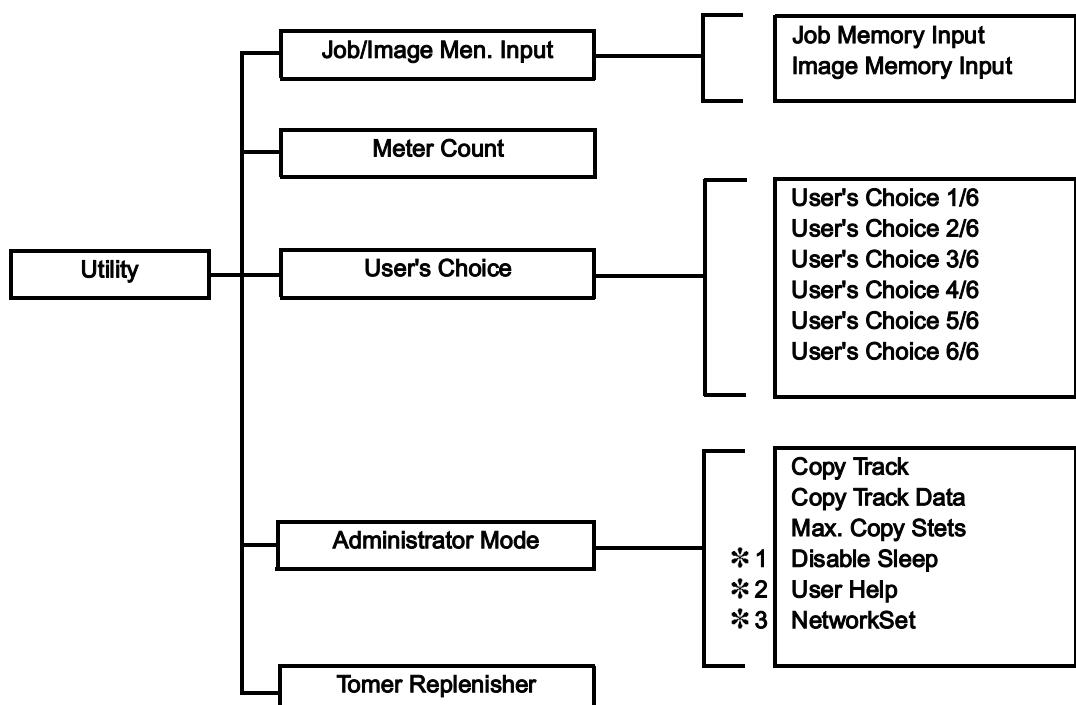
- Utility Mode is used to make various settings according to the user's need.

#### 3-1. Utility Mode selection Screen

- Press the Utility key on the control panel.



#### 3-2. Utility Mode Function Tree



- \* 1: The description of the function displayed on the Touch Panel is "Disable Sleep" when a printer controller is connected to the copier and "Disable Auto Shut off" when one is not connected.
- \* 2: FDisplayed when a Data Terminal is connected to the copier.
- \* 3: FDisplayed when a printer controller is connected to the copier.

### **3-3. Settings in the Utility Mode**

Touch Panel Display	Setting
Job/Image Men. Input	Permits programming of various functions, including copying jobs.
Meter Count	Displays the counts of various counters.
User's Choice	User's Choice is used to make various settings according to the user's need.
Administrator Mode	The entry of the "Administrator #" set using the Tech. Rep. mode permits the settings of the following functions.
Toner Replenisher	Replenishes the supply of toner.

#### **(1) User's Choice Mode**

- User's Choice is used to make various settings according to the user's need.

##### **1. User's Choice Function Setting Procedure**

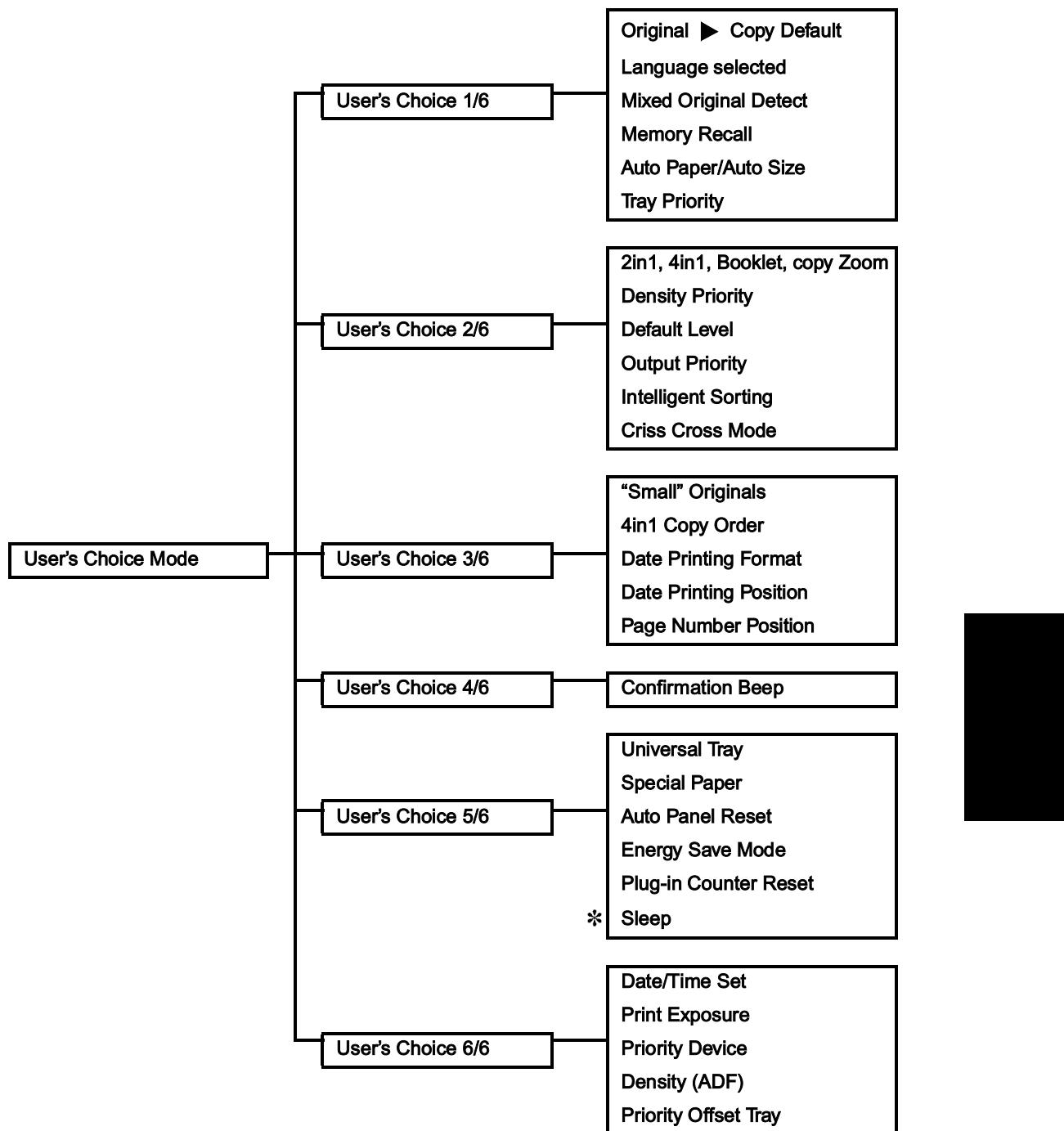
<Procedure>

1. Press the Utility key.
2. Touch the "User's Choice" key.
3. Select the appropriate screen from the menu.
4. Select the appropriate function.
5. After the settings are complete, touch the "Enter" key to validate the settings.

<Exiting the Mode>

- Press the Panel Reset key.

## 2. User's Choice Function Tree

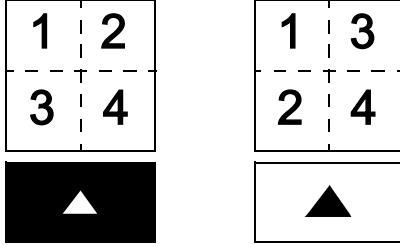


\* The function displayed on the Touch Panel is "Sleep" when a Printer Controller is connected to the machine and "Auto Shut off" when one is not connected.

### **3. Settings in the User's Choice Mode**

<b>Touch Panel Display</b>	Setting (The default is <b>Highlighted</b> ).																														
<b>Original ▶ Copy Default</b>	Select the priority type of Original ▶ Copy setting selected automatically when the Power Switch is turned ON or Panel Reset key pressed.																														
	<b>1-Sided ▶ 1-Sided</b> <b>1-Sided ▶ 2-Sided</b> <b>2-Sided ▶ 2-Sided</b>																														
<b>Language selected</b>	Select the language of the Touch Panel messages. <table style="width: 100%; text-align: center; margin-top: 10px;"> <tr> <td colspan="3">&lt;Metric Areas&gt;</td> <td colspan="3">&lt;Inch Areas&gt;</td> </tr> <tr> <td><b>ENGLISH</b></td><td>GERMAN</td><td>FRENCH</td> <td><b>ENGLISH</b></td><td>FRENCH</td><td>SPANISH</td> </tr> <tr> <td>DUTCH</td><td>ITALIAN</td><td>SPANISH</td> <td colspan="3">JAPANESE</td> </tr> <tr> <td>PORTUGUESE</td><td>DANISH</td><td>NORWEGIAN</td> <td colspan="3"></td> </tr> <tr> <td>SWEDISH</td><td>FINISH</td><td>JAPANESE</td> <td colspan="3"></td> </tr> </table>	<Metric Areas>			<Inch Areas>			<b>ENGLISH</b>	GERMAN	FRENCH	<b>ENGLISH</b>	FRENCH	SPANISH	DUTCH	ITALIAN	SPANISH	JAPANESE			PORTUGUESE	DANISH	NORWEGIAN				SWEDISH	FINISH	JAPANESE			
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<b>ENGLISH</b>	GERMAN	FRENCH	<b>ENGLISH</b>	FRENCH	SPANISH																										
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PORTUGUESE	DANISH	NORWEGIAN																													
SWEDISH	FINISH	JAPANESE																													
<b>Mixed Original Detect</b>	Select the priority Mixed Original Detection mode that is automatically selected when the Power Switch is turned ON or Panel Reset key pressed.																														
	<b>ON</b> <b>OFF</b>																														
<b>Memory Recall</b>	Select whether to enable or disable the Memory Recall function.																														
	<b>ON</b> <b>OFF</b>																														
<b>Auto Paper/Auto Size</b>	Select the priority Auto mode (Auto Paper or Auto Size) selected when the Power Switch is turned ON or Panel Reset key pressed.																														
	<b>Auto Paper</b> Auto Size    Manual																														
<b>Tray Priority</b>	Select the priority paper source that is automatically selected when the copier is set into the Auto Size or Manual mode.																														
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 5px;"><b>1st Drawer</b></td> <td style="padding: 5px;">2nd Drawer</td> </tr> <tr> <td style="padding: 5px;">3rd Drawer</td> <td style="padding: 5px;">4th Drawer</td> </tr> <tr> <td style="padding: 5px;">LCT</td> <td></td> </tr> </table>	<b>1st Drawer</b>	2nd Drawer	3rd Drawer	4th Drawer	LCT																									
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3rd Drawer	4th Drawer																														
LCT																															
<b>2in1, 4in1, Booklet Copy Zoom</b>	Select whether to enable or disable recalling a default zoom ratio when Auto Paper is selected for 2in1, 4in1, or Booklet Creation. <b>&lt;2in1 4in1&gt;</b>																														
	<b>ON</b> OFF																														
	<b>&lt;Booklet Creation&gt;</b>																														
	<b>ON</b> OFF																														

Touch Panel Display	Setting (The default is <b>Highlighted</b> ).									
Density Priority	<p>Specify the priority exposure mode that is selected automatically when the Power Switch is turned ON or the Panel Reset key pressed.</p> <p>&lt;Density&gt;</p> <table border="1"> <tr> <td><b>Auto Exposure</b></td> <td>Manual</td> </tr> </table> <p>&lt;Original Image Type&gt;</p> <table border="1"> <tr> <td><b>Text</b></td> <td>Text/Photo</td> <td>Photo</td> </tr> </table>	<b>Auto Exposure</b>	Manual	<b>Text</b>	Text/Photo	Photo				
<b>Auto Exposure</b>	Manual									
<b>Text</b>	Text/Photo	Photo								
Default Level	<p>Auto: Select the priority exposure level in the Auto Exposure mode. Manual: Select the priority exposure level in the Manual Exposure mode.</p> <p>&lt;Auto&gt;</p> <table border="1"> <tr> <td>Lighter</td> <td><b>Normal</b></td> <td>Darker</td> </tr> </table> <p>&lt;Manual&gt;</p>  <table border="1"> <tr> <td>Lighter</td> <td><b>Normal</b></td> <td>Darker</td> </tr> </table>	Lighter	<b>Normal</b>	Darker	Lighter	<b>Normal</b>	Darker			
Lighter	<b>Normal</b>	Darker								
Lighter	<b>Normal</b>	Darker								
Output Priority	<p>Select the priority finishing type.</p> <p><b>NOTE:</b></p> <ul style="list-style-type: none"> <li><i>The contents of the display vary depending on the types of finishing options mounted on the machine.</i></li> </ul> <table border="1"> <tr> <td><b>Non Sort</b></td> <td>Corner Staple</td> <td>2-Hole Punch</td> </tr> <tr> <td>Sort</td> <td>2-Point Staple</td> <td>3-Hole Punch</td> </tr> <tr> <td>Group</td> <td></td> <td></td> </tr> </table>	<b>Non Sort</b>	Corner Staple	2-Hole Punch	Sort	2-Point Staple	3-Hole Punch	Group		
<b>Non Sort</b>	Corner Staple	2-Hole Punch								
Sort	2-Point Staple	3-Hole Punch								
Group										
Intelligent Sorting	<p>Select whether to enable or disable the function that automatically switches between Sort and Non-Sort according to the number of originals and the number of copy sets to be made. Applicable when the system is equipped with a finishing option and using an EDH.</p> <table border="1"> <tr> <td><b>ON</b></td> <td>OFF</td> </tr> </table>	<b>ON</b>	OFF							
<b>ON</b>	OFF									
Criss Cross Mode	<p>Select whether to enable or disable crisscross sorting automatically.</p> <table border="1"> <tr> <td><b>ON</b></td> <td>OFF</td> </tr> </table>	<b>ON</b>	OFF							
<b>ON</b>	OFF									

Touch Panel Display	Setting (The default is <b>Highlighted</b> ).										
"Smaller" Originals	Select whether to enable or disable a copy cycle when it is initiated with an original of a small size that is not detectable by the system placed on the Original Glass.  <table border="1" style="width: 100%; text-align: center;"> <tr> <td>ON</td> <td>OFF</td> </tr> </table> <p>* Default: Metric areas OFF/Inch Areas ON.</p>	ON	OFF								
ON	OFF										
4in1 Copy Order	Specify the default copying order in the 4in1 mode.  										
Date Printing Format	Select the delimiter and format for date printing.  <p>&lt;Punctuation&gt;</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td>XX / XX / XX</td> <td>XX. XX. XX</td> </tr> </table> <p>&lt;Year&gt;</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td>'yy</td> <td>yyyy</td> </tr> </table> <p>&lt;Date Format&gt;</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td>'00/12/24</td> <td>DEC/24/'00</td> <td>24/DEC/'00</td> </tr> <tr> <td>12/24/'00</td> <td>24/12/'00</td> <td></td> </tr> </table>	XX / XX / XX	XX. XX. XX	'yy	yyyy	'00/12/24	DEC/24/'00	24/DEC/'00	12/24/'00	24/12/'00	
XX / XX / XX	XX. XX. XX										
'yy	yyyy										
'00/12/24	DEC/24/'00	24/DEC/'00									
12/24/'00	24/12/'00										
Date Printing Position	Select the position at which to print the date.  <p>&lt;Metric Areas&gt;</p> <table border="1" style="display: inline-table; vertical-align: top;"> <tr> <td>X</td> <td>4 to 40 ( <b>8 mm</b> )</td> </tr> <tr> <td>Y</td> <td>4 to 40 ( <b>20 mm</b> )</td> </tr> </table> <p>&lt;Inch Areas&gt;</p> <table border="1" style="display: inline-table; vertical-align: top;"> <tr> <td>X</td> <td>3/16 to 1-9/16" ( <b>1/4"</b> )</td> </tr> <tr> <td>Y</td> <td>3/16 to 1-9/16" ( <b>3/4"</b> )</td> </tr> </table>	X	4 to 40 ( <b>8 mm</b> )	Y	4 to 40 ( <b>20 mm</b> )	X	3/16 to 1-9/16" ( <b>1/4"</b> )	Y	3/16 to 1-9/16" ( <b>3/4"</b> )		
X	4 to 40 ( <b>8 mm</b> )										
Y	4 to 40 ( <b>20 mm</b> )										
X	3/16 to 1-9/16" ( <b>1/4"</b> )										
Y	3/16 to 1-9/16" ( <b>3/4"</b> )										
Page Number Position	Set the position at which to print the page number, how many millimeters or inches from the bottom of the page.  <p>&lt;Metric Areas&gt;</p> <table border="1" style="display: inline-table; vertical-align: top;"> <tr> <td>4 to 40 ( <b>8 mm</b> )</td> </tr> </table> <p>&lt;Inch Areas&gt;</p> <table border="1" style="display: inline-table; vertical-align: top;"> <tr> <td>3/16 to 1-9/16" ( <b>1/4"</b> )</td> </tr> </table>	4 to 40 ( <b>8 mm</b> )	3/16 to 1-9/16" ( <b>1/4"</b> )								
4 to 40 ( <b>8 mm</b> )											
3/16 to 1-9/16" ( <b>1/4"</b> )											
Confirmation Beep	Select whether to enable or disable the beep that sounds each time a key on the control panel is pressed or a function on the Touch Panel touched.  <table border="1" style="text-align: center;"> <tr> <td>ON</td> <td>OFF</td> </tr> </table>	ON	OFF								
ON	OFF										

Touch Panel Display	Setting (The default is <b>Highlighted</b> ).								
Universal Tray	Set the paper size for the Universal Tray.								
	<input type="button" value="Auto Detect"/> <input type="button" value="Size Input"/>								
Special Paper	Define the type of paper used for each paper source, or designate a particular paper source for special paper.								
	<table border="1"> <tr> <td><b>Normal</b></td><td>Cover/Insert</td></tr> <tr> <td>Recycled</td><td>Cover</td></tr> <tr> <td>Not for 2-Sided</td><td>Insert</td></tr> </table>			<b>Normal</b>	Cover/Insert	Recycled	Cover	Not for 2-Sided	Insert
<b>Normal</b>	Cover/Insert								
Recycled	Cover								
Not for 2-Sided	Insert								
Auto Panel Reset	Select the time it takes the Auto Panel Reset function, which resets the panel settings when the set period of time elapses after a copy cycle has been completed or the last key operated, to be activated.								
	<table border="1"> <tr> <td>30 sec.</td><td><b>1 min.</b></td><td>2 min.</td></tr> <tr> <td>3 min.</td><td>5 min.</td><td>No Reset</td></tr> </table>			30 sec.	<b>1 min.</b>	2 min.	3 min.	5 min.	No Reset
30 sec.	<b>1 min.</b>	2 min.							
3 min.	5 min.	No Reset							
Energy Saver Mode	Select the time it takes the copier to enter the Energy Saver mode after a copy cycle has been completed or the last key operated. Use the 10-Key Pad to set the time.								
	<table border="1"> <tr> <td colspan="3">1 to 90 ( <b>15 min.</b> )</td></tr> </table>			1 to 90 ( <b>15 min.</b> )					
1 to 90 ( <b>15 min.</b> )									
Plug-In Counter Reset	Select whether or not to activate the Panel Reset function when the Plug-In Counter or a magnetic card is pulled out.								
	<table border="1"> <tr> <td><b>ON</b></td><td>OFF</td></tr> </table>			<b>ON</b>	OFF				
<b>ON</b>	OFF								
Sleep * When a Printer Controller is connected.	Select the time it takes the Sleep function, which shuts down the copier when the set period of time elapses after a copy cycle has been completed or the last key operated, to be activated.								
	<p><b>NOTE:</b></p> <ul style="list-style-type: none"> <li>The option of "OFF" becomes available on the screen if "Yes" is selected for "Disable Sleep" of the "Administrator Mode" function.</li> </ul>								
	<table border="1"> <tr> <td>OFF</td><td>15 to 90 ( <b>90 min.</b> )</td></tr> </table>			OFF	15 to 90 ( <b>90 min.</b> )				
OFF	15 to 90 ( <b>90 min.</b> )								

Touch Panel Display	Setting (The default is <b>Highlighted</b> ).									
Auto Shut-Off Mode  * When a Printer Controller is not connected.	<p>Select the time it takes the Auto Shut Off function, which shuts down the copier when the set period of time elapses after a copy cycle has been completed or the last key operated, to be activated.</p> <p><b>NOTE:</b></p> <ul style="list-style-type: none"> <li>The option of "OFF" becomes available on the screen if "Yes" is selected for "Disable Auto Shut off" of the "Administrator Mode" function.</li> </ul> <table border="1" style="width: 100%; text-align: center;"> <tr> <td>OFF</td> <td>15 to 90 ( <b>90 min.</b> )</td> </tr> </table>		OFF	15 to 90 ( <b>90 min.</b> )						
OFF	15 to 90 ( <b>90 min.</b> )									
Date/Time Set	<p>Set the date and time-of-day for Date Printing.</p> <table border="1" style="width: 100%; margin-bottom: 10px;"> <tr> <td style="width: 50%;">Year</td> <td>1999 to 2089</td> <td style="width: 50%;">Month</td> <td>1 to 12</td> </tr> </table> <table border="1" style="width: 100%;"> <tr> <td style="width: 50%;">Day</td> <td>1 to 31</td> <td style="width: 50%;">Time</td> <td>00 to 23 (hour) 00 to 59 (min)</td> </tr> </table>		Year	1999 to 2089	Month	1 to 12	Day	1 to 31	Time	00 to 23 (hour) 00 to 59 (min)
Year	1999 to 2089	Month	1 to 12							
Day	1 to 31	Time	00 to 23 (hour) 00 to 59 (min)							
Print Exposure	<p>Set the image density level for printing.</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td>Lighter</td> <td><b>Normal</b></td> <td>Darker</td> </tr> </table>		Lighter	<b>Normal</b>	Darker					
Lighter	<b>Normal</b>	Darker								
Priority Device	<p>Select the priority configuration of the copier established when the Power Switch is turned ON or the Panel Reset key pressed.</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td>Copier</td> <td>Printer</td> </tr> </table>		Copier	Printer						
Copier	Printer									
Density (ADF)	<p>Adjust the copy image density level when the ADF is being used.</p> <table border="1" style="width: 100%; margin-bottom: 10px;"> <tr> <td style="width: 50%;">Mode 1</td> <td>When the standard original (text, etc.) is used.</td> </tr> </table> <table border="1" style="width: 100%;"> <tr> <td style="width: 50%;"><b>Mode 2</b></td> <td>To give better reproduction of faint original.</td> </tr> </table>		Mode 1	When the standard original (text, etc.) is used.	<b>Mode 2</b>	To give better reproduction of faint original.				
Mode 1	When the standard original (text, etc.) is used.									
<b>Mode 2</b>	To give better reproduction of faint original.									
Priority Offset Tray	<p>Select the particular Offset Tray to which priority is given.</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td><b>Top Tray</b></td> <td>Bottom Tray</td> </tr> </table>		<b>Top Tray</b>	Bottom Tray						
<b>Top Tray</b>	Bottom Tray									

## (2) Administrator Mode

- The entry of the "Administrator #" set using the Tech. Rep. mode permits the settings of the following functions.

### 1. Administrator Mode Function Setting Procedure

<Procedure>

- Press the Utility key.
- Touch the "Administrator Mode" key.
- Enter the Administrator number.
- Select the appropriate function.
- After the settings are complete, touch the "Enter" key to validate the settings.

<Exiting the Mode>

- Press the Panel Reset key.

### 2. Settings in the Administrator Mode

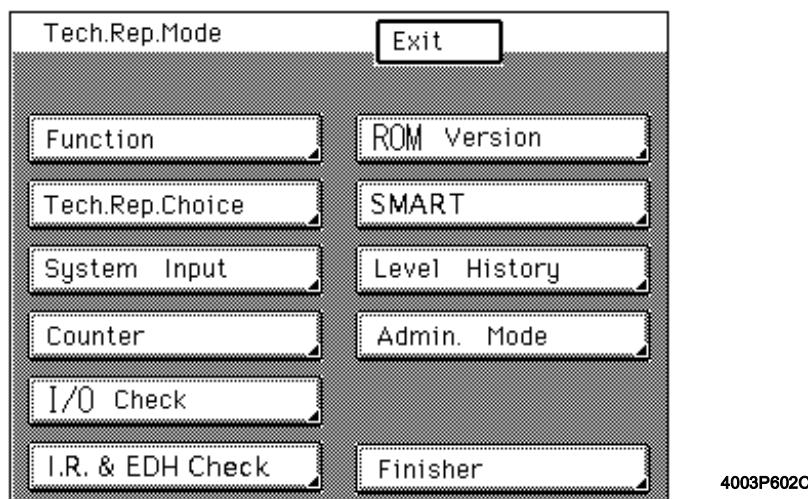
Touch Panel Display	Setting (The default is <b>Highlighted</b> ).						
Copy Track	<p>Select the number of accounts to be controlled.</p> <p>-Copy Track-</p> <p>&lt;Copy&gt;                          &lt;Printer&gt;</p> <table><tr><td>ON</td><td>ON</td></tr><tr><td><b>OFF</b></td><td><b>OFF</b></td></tr></table> <p><b>NOTE:</b></p> <ul style="list-style-type: none"><li>Printer is displayed when an external I/F is connected.</li></ul> <p>-Copy Track method-</p> <table><tr><td>100 Accounts</td></tr><tr><td>1000 Accounts</td></tr></table>	ON	ON	<b>OFF</b>	<b>OFF</b>	100 Accounts	1000 Accounts
ON	ON						
<b>OFF</b>	<b>OFF</b>						
100 Accounts							
1000 Accounts							
Copy Track	Select whether or not to initialize the copy track data so far taken.						
Copy Track Data	Select the particular account number. When "All Counter Reset" is touched, it clears all data under control.						

Touch Panel Display	Setting (The default is <b>Highlighted</b> ).				
100 Accounts	<p>The copy track data of the selected page is displayed.          "No.": Enter the set account number from the 10-Key Pad.          "Total Count": Displays the count of the Total Counter.          "Size Count": Displays the count of the Size Counter.          "Copy Limit": Enter the maximum number of copies that can be made from the 10-Key Pad.          "Access Code": Enter the access number, which can range from 0001 to 9999, from the 10-Key Pad.          These data can be cleared with the Clear key.</p>				
1000 Accounts	<p>The copy track data of the selected page is displayed.          "No.": Displays the account number. (Setting cannot be changed.)          "Total Count": Displays the count of the Total Counter. (It can be cleared with the Clear key.)</p> <p><b>NOTE:</b></p> <ul style="list-style-type: none"> <li><i>The account number corresponds to the access code (ID) of that particular account.</i></li> </ul>				
Permission Level	<p>Determine the number of copies or copy sets that can be set using the 10-Key Pad.</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td>1 to 99</td> <td>OFF</td> </tr> </table>	1 to 99	OFF		
1 to 99	OFF				
Disable Sleep  * When a Printer Controller is connected.	<p>Select whether to enable or disable the setting of the "Sleep" function available from User's Choice.</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td>No</td> <td>Not displayed.</td> </tr> <tr> <td>Yes</td> <td>Displayed.</td> </tr> </table>	No	Not displayed.	Yes	Displayed.
No	Not displayed.				
Yes	Displayed.				
Disable Auto Shut off  * When a Printer Controller is not connected.	<p>Select whether to enable or disable the setting of the "Auto Shut Off" function available from User's Choice.</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td>No</td> <td>Not displayed.</td> </tr> <tr> <td>Yes</td> <td>Displayed.</td> </tr> </table>	No	Not displayed.	Yes	Displayed.
No	Not displayed.				
Yes	Displayed.				
User Help	Transmits various data to the Center when a Data Terminal is mounted on the copier.				
Network Set	Set the address of the printer controller.				

## 4. TECH. REP. MODE

- This mode is used by the Tech. Rep. to check, set, adjust, and/or program various service functions.

### 4-1. Tech. Rep. Mode Menu Screen



### 4-2. Tech. Rep. Mode Function Setting Procedure

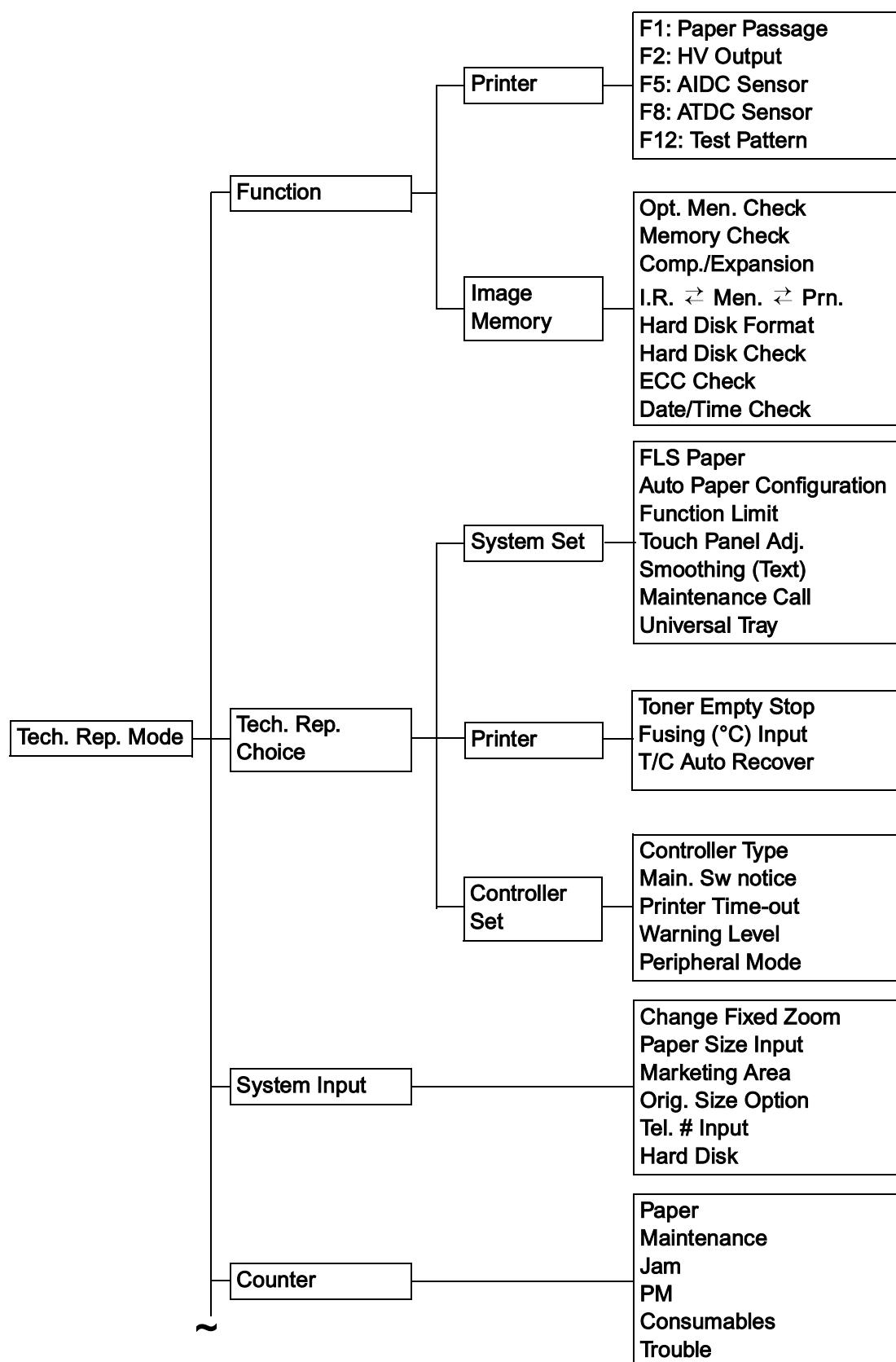
<Procedure>

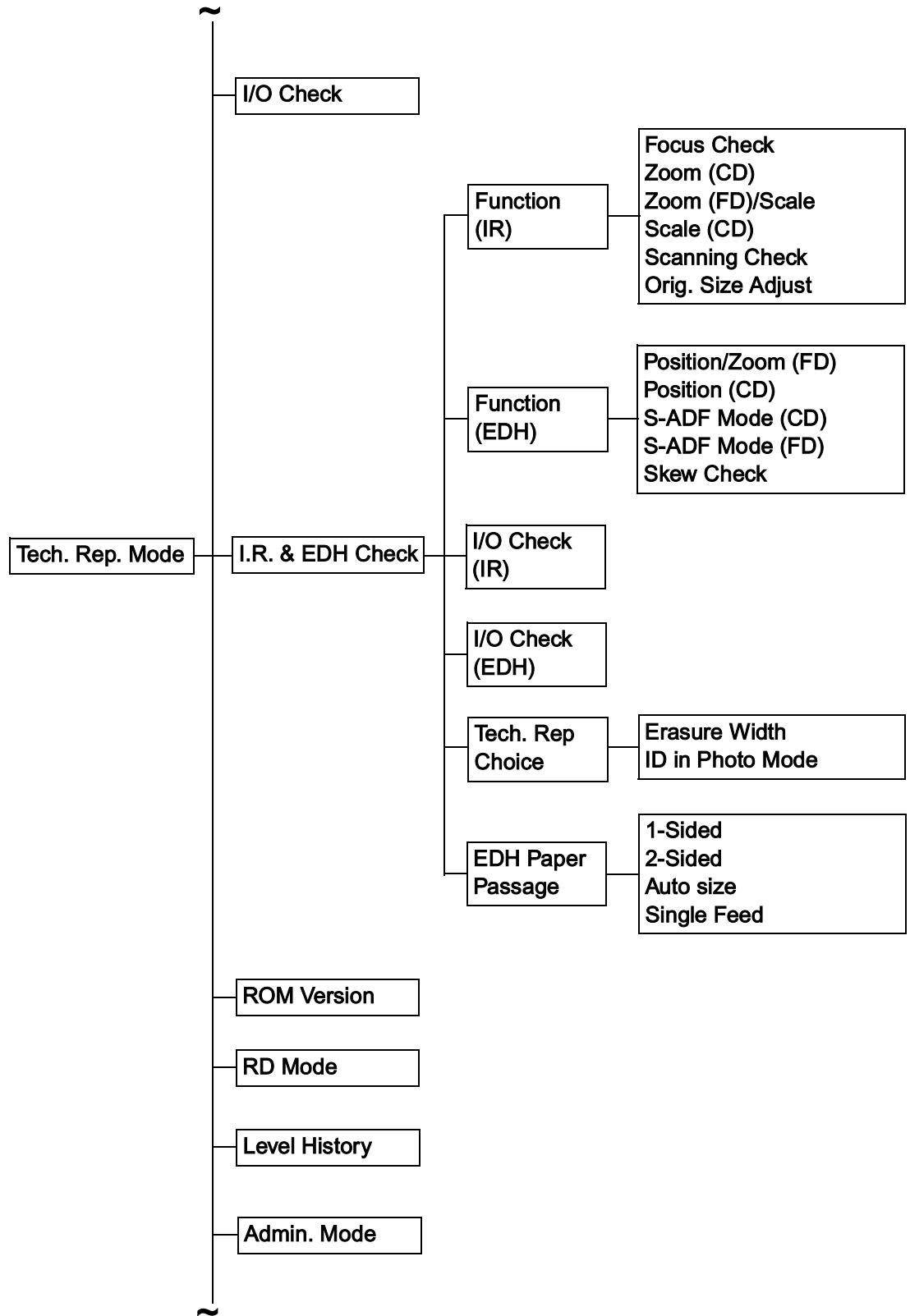
1. Press the Utility key.
2. Press the Meter Count key.
3. Press the following keys in this order:  
Stop → 0 → 0 → Stop → 0 → 1
4. Select the desired Tech. Rep. Mode function.

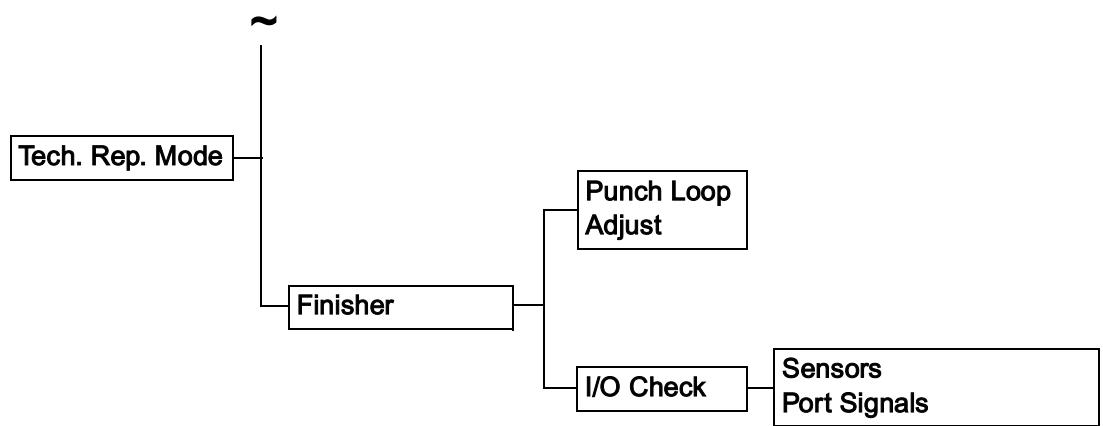
<Exiting the Mode>

- Press the Panel Reset key.

### 4-3. Tech. Rep. Mode Menu Function Tree







## 4-4. Setting in the Tech. Rep. Mode

### (1) Function

- This function allows the Tech. Rep. to make the various function tests and adjustments.  
<Functions>

Printer: Used for making the various function tests and adjustments for the printer.

Image Memory: Used for making the various function tests and adjustments for image memory.

Touch Panel Display	Operation																								
F1: Paper Passage	A check is made for paper passage performance. <Procedure> 1. Select the paper source. 2. Touch "Duplex" for paper passage output on paper fed from the Duplex Unit. 3. Press the Start key to start the paper passage cycle. 4. Press the Stop key to stop the paper passage cycle.																								
F2: HV Output	This test is for factory adjustment only and should NOT be used.																								
F5: AIDC Sensor	Adjusts the output level of the AIDC Sensor. * For details, see DIS/REASSEMBLY, ADJUSTMENT.																								
F8: ATDC Sensor	Adjusts the output level of the ATDC Sensor. * For details, see DIS/REASSEMBLY, ADJUSTMENT.																								
F12: Test Pattern	Outputs the test pattern. <Procedure> 1. Touch "Duplex" for test pattern output on paper fed from the Duplex Unit. 2. Select the test pattern type. 3. Select the paper source. 4. Press the Start key to start the output sequence. 5. Press the Stop key to stop the output sequence.  <table border="1"> <thead> <tr> <th>Display</th> <th>Type</th> <th>Display</th> <th>Type</th> </tr> </thead> <tbody> <tr> <td>F12-0</td> <td>Dots</td> <td>F12-5</td> <td>ID self printing</td> </tr> <tr> <td>F12-1</td> <td>Gradation</td> <td>F12-6</td> <td>Double dots</td> </tr> <tr> <td>F12-2</td> <td>Halftone</td> <td>F12-7</td> <td>45° slant line</td> </tr> <tr> <td>F12-3</td> <td>64-dot checkered</td> <td>F12-8</td> <td>2-dot line pair</td> </tr> <tr> <td>F12-4</td> <td>Solid black</td> <td>F12-9</td> <td>LD beam position correction</td> </tr> </tbody> </table>	Display	Type	Display	Type	F12-0	Dots	F12-5	ID self printing	F12-1	Gradation	F12-6	Double dots	F12-2	Halftone	F12-7	45° slant line	F12-3	64-dot checkered	F12-8	2-dot line pair	F12-4	Solid black	F12-9	LD beam position correction
Display	Type	Display	Type																						
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F12-3	64-dot checkered	F12-8	2-dot line pair																						
F12-4	Solid black	F12-9	LD beam position correction																						
Opt. Men. Check	Checks for the connection of optional memory.																								

Touch Panel Display	Operation
Memory Check	<p>Writes data in the image memory and reads it out to check for exact correspondence.</p> <p>The Touch Panel shows the percentage of processing completed of each diagnostic sequence and the number of diagnostic sequences carried out. If a fault is encountered, it gives the message of "NG" together with the address at which the fault occurred.</p> <p>&lt;Procedure&gt;</p> <ol style="list-style-type: none"> <li>1. Press the Start key to start the diagnostic sequence.</li> <li>2. Press the Stop key to stop the diagnostic sequence.</li> </ol>
Comp./Expansion	<p>Comp.: Checks to determine if the image data has been properly compressed in memory.</p> <p>Expansion: Checks to determine if the compressed image data is properly expanded in memory.</p> <p>The Touch Panel shows the percentage of processing completed of the diagnostic sequence. If the sequence has been completed okay, it gives the message of "OK"; if a fault was encountered, it gives the message of "NG" together with the corresponding malfunction code.</p> <p>&lt;Procedure&gt;</p> <ul style="list-style-type: none"> <li>• Press the Start key to start the diagnostic sequence.</li> </ul>
I.R. ⇔ Men. ⇔ Prn.	<p>I.R. → Memory: Checks for correct image signal transfer between I.R. and memory.</p> <p>The Touch Panel shows the percentage of processing completed of the diagnostic sequence. If the sequence has been completed okay, it gives the message of "OK"; if a fault was encountered, it gives the message of "NG" together with the corresponding malfunction code.</p> <p>&lt;Procedure&gt;</p> <ol style="list-style-type: none"> <li>1. Touch "IR → Memory".</li> <li>2. Press the Start key to start the diagnostic sequence.</li> </ol> <p>Memory → Printer: Checks for correct image signal transfer between memory and printer.</p> <p>The Touch Panel shows the percentage of processing completed of the diagnostic sequence. If the sequence has been completed okay, it gives the message of "OK"; if a fault was encountered, it gives the message of "NG" together with the corresponding malfunction code.</p> <p>During the sequence, the copier also produces a test copy which can be checked for correct image.</p> <p>&lt;Procedure&gt;</p> <ol style="list-style-type: none"> <li>1. Touch either "Memory → Prn1" or "Memory → Prn".</li> <li>2. Load the Multi Bypass Table with A4 lengthwise paper.</li> <li>3. Press the Start key to start the diagnostic sequence.</li> </ol>

Touch Panel Display	Operation
Hard Disk Format	<p>Formats the Hard Disk.</p> <p>The Touch Panel shows the percentage of processing completed. If formatting has been normally completed, the panel gives the message of "OK"; if it has been abnormally terminated, the panel gives the message of "NG" together with the corresponding malfunction code.</p> <p>&lt;Procedure&gt;</p> <ul style="list-style-type: none"> <li>• Press the Start key to start the formatting sequence.</li> </ul>
Hard Disk Check	<p>Checks for proper connection and read/write operation of the Hard Disk.</p> <p>The Touch Panel shows the percentage of sequence completed. If the check has been completed okay, it gives the message of "OK"; if a fault was encountered, it gives the message of "NG" together with the corresponding malfunction code.</p> <p>&lt;Procedure&gt;</p> <ul style="list-style-type: none"> <li>• Press the Start key to start the check sequence.</li> </ul>
ECC Check	<p>Checks for proper connection of the ECC.</p> <p>The Touch Panel shows the percentage of sequence completed. If the check has been completed okay, it gives the message of "OK"; if a fault was encountered, it gives the message of "NG" together with the corresponding malfunction code.</p> <p>&lt;Procedure&gt;</p> <ul style="list-style-type: none"> <li>• Press the Start key to start the check sequence.</li> </ul>
Date/Time Check	Checks for the current time-of-day and date.

**(2) Tech. Rep. Choice**

- This function allows the Tech. Rep. to make various settings and adjustments.

<Functions>

System Set: Choice functions relating to the printer.

Printer: Choice functions relating to image memory.

Controller Set: Choice functions relating to the Printer Controller.

Touch Panel Display	Setting (The default is <b>Highlighted</b> ).											
FLS Paper	Set the size for FLS.											
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">F: 330.2 mm</td> <td style="padding: 2px;"><b>F: 330 mm</b></td> <td style="padding: 2px;">F: 330.2 mm</td> <td style="padding: 2px;">F: 330 mm</td> </tr> <tr> <td style="padding: 2px;">C: 203.2 mm</td> <td style="padding: 2px;"><b>C: 210 mm</b></td> <td style="padding: 2px;">C: 215.9 mm</td> <td style="padding: 2px;">C: 220 mm</td> </tr> </table>				F: 330.2 mm	<b>F: 330 mm</b>	F: 330.2 mm	F: 330 mm	C: 203.2 mm	<b>C: 210 mm</b>	C: 215.9 mm	C: 220 mm
F: 330.2 mm	<b>F: 330 mm</b>	F: 330.2 mm	F: 330 mm									
C: 203.2 mm	<b>C: 210 mm</b>	C: 215.9 mm	C: 220 mm									
Auto Paper Configuration	Select the method of rounding of the detected original size.											
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px; text-align: center;"><b>Inch/Metric</b></td> <td colspan="3">The measurement is rounded to the nearest standard inch or metric size.</td></tr> <tr> <td style="padding: 2px; text-align: center;">Metric</td> <td colspan="3">The measurement is rounded to the nearest standard metric size.</td></tr> </table>				<b>Inch/Metric</b>	The measurement is rounded to the nearest standard inch or metric size.			Metric	The measurement is rounded to the nearest standard metric size.		
<b>Inch/Metric</b>	The measurement is rounded to the nearest standard inch or metric size.											
Metric	The measurement is rounded to the nearest standard metric size.											
Function Limit	Select whether to limit the functions to be set on the control panel or not.											
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px; text-align: center;">Enable</td> <td colspan="3">Limits the functions to the paper, zoom ratio, density, number of copies to be made, Mixed Orig. Detection, Free Orig. Placement, and Small Orig. Adjustment.</td></tr> <tr> <td style="padding: 2px; text-align: center;"><b>Disable</b></td> <td colspan="3">Enables all functions (no Limit).</td></tr> </table>				Enable	Limits the functions to the paper, zoom ratio, density, number of copies to be made, Mixed Orig. Detection, Free Orig. Placement, and Small Orig. Adjustment.			<b>Disable</b>	Enables all functions (no Limit).		
Enable	Limits the functions to the paper, zoom ratio, density, number of copies to be made, Mixed Orig. Detection, Free Orig. Placement, and Small Orig. Adjustment.											
<b>Disable</b>	Enables all functions (no Limit).											
Touch Panel Adj.	Corrects deviation in the sensitive area of the Touch Panel. <Procedure> <ul style="list-style-type: none"> <li>Sequentially touch the four points marked with + on the screen.</li> </ul>											
	<p><b>NOTE:</b></p> <ul style="list-style-type: none"> <li><i>Be sure to touch the exact center of the + marking.</i></li> </ul>											
Smoothing (Text)	Select whether to turn ON or OFF the smoothing for function for the Text mode.											
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px; text-align: center;"><b>ON</b></td> <td colspan="3" style="text-align: center;">OFF</td></tr> </table>				<b>ON</b>	OFF						
<b>ON</b>	OFF											
Maintenance Call	Select whether to enable or disable the maintenance call reminder (M1) message that is displayed when the maintenance counter count reaches the preset value.											
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px; text-align: center;">Call Indicated</td> <td colspan="3" style="text-align: center;"><b>Call Not Indicated</b></td></tr> </table>				Call Indicated	<b>Call Not Indicated</b>						
Call Indicated	<b>Call Not Indicated</b>											
Universal Tray	Set the inch size of paper to be used.											
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px; text-align: center;">14 × 81/4</td> <td colspan="3" style="text-align: center;"><b>14 × 81/2</b></td></tr> </table>				14 × 81/4	<b>14 × 81/2</b>						
14 × 81/4	<b>14 × 81/2</b>											

Touch Panel Display	Setting (The default is <b>Highlighted</b> ).							
Toner Empty Stop	Select whether or not to inhibit copying when a toner-empty condition is detected.							
	<input type="button" value="Enable"/> <input type="button" value="Disable"/>							
Fusing (°C) Input	Set the temperature for fusing temperature control according to the operating environment and the type of paper used.							
	<table border="1"> <tr> <td>1</td> <td><b>2</b></td> <td>3</td> </tr> <tr> <td>180 °C</td> <td>190 °C</td> <td>195 °C</td> </tr> </table>		1	<b>2</b>	3	180 °C	190 °C	195 °C
1	<b>2</b>	3						
180 °C	190 °C	195 °C						
T/C Auto Recover	Select whether to enable or disable auto recovery of T/C when it drops.							
	<input type="button" value="Enable"/> <input type="button" value="Disable"/>							
Controller Type	Set the type of the Printer Controller.							
	<input type="button" value="0 to 9 ( &lt;b&gt;0&lt;/b&gt; )"/>							
	* After the setting has been made, touch "END" and turn OFF and ON the Power Switch.							
Main. Sw notice	Select the timing at which the Printer Controller power is turned ON.							
	<table border="1"> <tr> <td><b>Mode 1</b></td> <td>After the machine has completed its initial operation.</td> </tr> <tr> <td>Mode 2</td> <td>When the machine is turned ON.</td> </tr> </table>		<b>Mode 1</b>	After the machine has completed its initial operation.	Mode 2	When the machine is turned ON.		
<b>Mode 1</b>	After the machine has completed its initial operation.							
Mode 2	When the machine is turned ON.							
	* After the setting has been made, touch "END" and turn OFF and ON the Power Switch.							
Printer Time-Out	Set the timeout period for the printer.							
	<input type="button" value="Disable"/> <input type="button" value="1 to 99 ( &lt;b&gt;10 min.&lt;/b&gt; )"/>							
	* After the setting has been made, touch "END" and turn OFF and ON the Power Switch.							
Warning Level	Select the type of warning display given when an error occurs in the Printer Controller.							
	<input type="button" value="Trouble"/> <input type="button" value="Attention"/>							
	* After the setting has been made, touch "END" and turn OFF and ON the Power Switch.							

Touch Panel Display	Setting (The default is <b>Highlighted</b> ).		
Peripheral Mode	Select the type of external I/F operation.		
	Pi4700e	Pi5500	
Mode 1	Scan to E-mail/FTP Server.	-	
<b>Mode 2</b>	-	-	
Mode 3	No selection of Scan function.	Scan to HDD.*1	
Mode 4	-	Scan to HDD/E-mail.*2	
Mode 5	-	-	
<p>* 1: Check the version number of the controller system software and, if it is 1.01 or 1.02, select [Mode 3].</p> <p>* 2: Check the version number of the controller system software and, if it is 2.0 or later, select [Mode 4].</p> <p>* After the setting has been made, touch "END" and turn OFF and ON the Power Switch.</p>			

### (3) System Input

- This function allows the Tech. Rep. to change the fixed zoom ratios, set the paper size, define the marketing area, and make other settings.

Touch Panel Display	Setting (The default is <b>Highlighted</b> ).		
Change Fixed Zoom	Change a fixed zoom ratio to a desired value. <b>&lt;Procedure&gt;</b> 1. Touch the key of the fixed zoom ratio to be changed. 2. Press the Clear key. 3. Enter the new ratio from the 10-Key Pad. 4. Touch "Input" to validate the new setting.		
Paper Size Input	Set the paper size. <b>&lt;Procedure&gt;</b> 1. Select the paper source. 2. Select the paper size. 3. Touch "END" to validate the new setting.		
Marketing Area	Set the marketing area.		
	MSJ	MC	ME
Original Size Detecting Option	Select "ON" when the optional Original Size Detecting Sensor is mounted.		
	ON	<b>OFF</b>	

Tel. # Input	Enter the telephone number that will appear on the Touch Panel when a malfunction occurs in the copier. <b>&lt;Procedure&gt;</b> 1. Enter the phone number from the 10-Key Pad. Use the Interrupt key to enter a hyphen “-.” 2. Touch “END” to validate the phone number setting.		
Hard Disk	Select “ON” if a Hard Disk is mounted. <table border="1" style="margin-left: auto; margin-right: auto;"><tr><td style="text-align: center;">ON</td><td style="text-align: center;"><b>OFF</b></td></tr></table>	ON	<b>OFF</b>
ON	<b>OFF</b>		

#### (4) Counter

- Shows the number of copies made on each paper size or type.

<Clearing a Count>

- Open the counter menu screen.
- Select the counter to be cleared.
- Press the Clear key.
- Touch "END".

Press the Interrupt key to undo the clearing operation, restoring the original count.

<Clearing All Counts of a Counter Type at Once>

- Touch the "Counter Reset" key.
- Select the counters to be cleared all at once.
- Touch "OK".

Touch Panel Display	Setting																														
Paper	<p>Counts the number of sheets of paper used according to the size and type.</p> <table border="1"> <thead> <tr> <th colspan="2">Paper size</th> </tr> </thead> <tbody> <tr> <td>A3</td> <td>11 × 17</td> </tr> <tr> <td>B4</td> <td>11 × 14</td> </tr> <tr> <td>A4</td> <td>Letter</td> </tr> <tr> <td>B5</td> <td>Legal</td> </tr> <tr> <td>A5</td> <td>5-1/2 × 8-1/2</td> </tr> <tr> <td>B6</td> <td>FLS</td> </tr> <tr> <td>A6</td> <td>Executive</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th colspan="2">Paper Type</th> </tr> </thead> <tbody> <tr> <td>Not-2-Sided</td> <td></td> </tr> <tr> <td>Normal</td> <td></td> </tr> <tr> <td>Recycle</td> <td></td> </tr> <tr> <td>Cover</td> <td></td> </tr> <tr> <td>Insert</td> <td></td> </tr> <tr> <td>Cover/Insert</td> <td></td> </tr> </tbody> </table>	Paper size		A3	11 × 17	B4	11 × 14	A4	Letter	B5	Legal	A5	5-1/2 × 8-1/2	B6	FLS	A6	Executive	Paper Type		Not-2-Sided		Normal		Recycle		Cover		Insert		Cover/Insert	
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Insert																															
Cover/Insert																															
Maintenance	<p>Set different count values for the Maintenance Counter. When the preset count is reached, the maintenance call reminder message and maintenance code "M1" appear on the Touch Panel.</p> <p><b>NOTE:</b></p> <ul style="list-style-type: none"> <li>Whether the maintenance call reminder message and maintenance code is given or not depends on the setting made in Tech. Rep. Choice.</li> </ul> <hr/> <p>&lt;Procedure&gt;</p> <ol style="list-style-type: none"> <li>Touch "Maintenance Set".</li> <li>Press the Clear key to clear the current value. Press the Interrupt key to undo the clearing operation, restoring the original value.</li> <li>Enter the value from the 10-Key Pad.</li> <li>Touch "END".</li> </ol>																														

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* See MAINTENANCE SCHEDULE (machine/options) for the applicable parts.																							
Consumables	Enter the count of the Waste Toner and Web Roller counters. When the count reaches the set value, the maintenance code is displayed.  Web: Maintenance code "M3"																						
	<table border="1"> <thead> <tr> <th>Description</th><th>Maintenance code</th><th>Machine stop</th></tr> </thead> <tbody> <tr> <td>Initial set value</td><td>460 k</td><td><b>480 k</b></td></tr> <tr> <td>If the initial set value is changed</td><td>When the count reaches the set value</td><td>480 k</td></tr> </tbody> </table> Waste Toner: Maintenance code "M2"			Description	Maintenance code	Machine stop	Initial set value	460 k	<b>480 k</b>	If the initial set value is changed	When the count reaches the set value	480 k											
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Touch Panel Display	Setting			
Trouble				
	Malfunction Code	Description	Malfunction Code	Description
	C004E/F	Cooling Fan	C0210	Transfer Corona
	C0042	Fusing Unit Fan	C04X0	Exposure Lamp
	C0070/2	Toner Hopper Motor	C05X0	Fusing Unit
	C0090	Dev. Unit Drive Motor	C0602	Scanner Drive
	Malfunction Code	Description	Malfunction Code	Description
	C0650	Scanner Home	C095X	4th Drawer
	C090X	3rd Drawer	C099X	LCC
	C091X	2nd Drawer	C09CX	LCT
	C092X	1st Drawer		
	Malfunction Code	Description	Malfunction Code	Description
	C0B0X	Finisher Transport	C0B5X	Staple Unit (Rotation)
	C0B2X	Staple Unit (CD direction)	C0B7X	Punch
	C0B3X	Finisher Alignment	C0B8X	Finisher Shift Tray
	C0B4X	Finisher Staple Transport	C0BAX	Finisher Elevator Tray
	Malfunction Code	Description	Malfunction Code	Description
	C0BCX	Finisher Fold Unit	C1200/3/4	Memory
	C0E00	Main Erase	C12XX	Memory Board
	C0F24	AIDC Sensor	C128A/B/C	Load TimeOut
	C0F3X	ATDC Sensor	C128D/E	Save TimeOut
	Malfunction Code	Description	Malfunction Code	Description
	C12A0/4	Peripheral Signal (Input)	C13F0	SOS Sensor
	C12A8/9/C	Peripheral Signal (Output)	C1330	VD Trouble
	C12CX	HDD Trouble	C13FA-8/A-C	LaserBeam Adj. Trouble
	C1300	Polygon Motor	C13F9	Printer EEPROM Trouble

Touch Panel Display	Setting			
Trouble				
	Malfunction Code	Description	Malfunction Code	Description
	C1430	H. sysnc Trouble	C1461/2	Serial GA Trouble
	C143E	EDH Trouble	C1499	IR Cooling Fan
	C1440	Gain Adjust Trouble	C14XX	IR Sequence Trouble
	C1441	CCD Trouble	C1802	SPC Error
	Malfunction Code	Description		
	C1803	Memory Check Trouble		
	C180X	ECC Control Trouble		
	C10A1/2, C11EX	Communication (IR)		
	C10A5/6, C11FX, C1326/34	Com. (Prin.)		
	C133B	Communication (Option)		
	C10XX, C11XX	Others		

#### (5) I/O Check

- The following functions are used to locate the faulty spot.
  - Shows the states of the I/O ports when the copier is in the standby state.
- \* For details, see TROUBLESHOOTING.

#### (6) I.R. & EDH Check

- Allows the Tech. Rep. to make the various functional tests and adjustments of the IR (EDH).

Touch Panel Display	Setting
Function (IR)	Displays the screens used to adjust and check the IR.
Focus Check	Adjusts the focus level and displays the results of the adjustment made. * For details, see DIS/REASSEMBLY, ADJUSTMENT.
Zoom (CD)	Adjusts the zoom ratio in the CD direction and displays the results of the adjustment made. * For details, see DIS/REASSEMBLY, ADJUSTMENT.
Zoom (FD)/Scale	Adjusts the zoom ratio and the position of the scale in the FD direction, and displays the results of the adjustment made. * For details, see DIS/REASSEMBLY, ADJUSTMENT.
Scale (CD)	Adjusts the position of the scale in the CD direction and displays the results of the adjustment made. * For details, see DIS/REASSEMBLY, ADJUSTMENT.

Touch Panel Display	Setting								
Scanning Check	<p>Check the operations from image scanning to image processing. Normal: OK: Abnormal: NG See the following for details of "NG" display</p> <table border="1"> <thead> <tr> <th>Display</th><th>Action</th></tr> </thead> <tbody> <tr> <td>Optical</td><td>_____</td></tr> <tr> <td>Analog</td><td>* Check the optical system, change PWB-IA or B.</td></tr> <tr> <td>Digital</td><td>Change PWB-B.</td></tr> </tbody> </table> <p>* Made for correct alignment of the optical axis.</p>	Display	Action	Optical	_____	Analog	* Check the optical system, change PWB-IA or B.	Digital	Change PWB-B.
Display	Action								
Optical	_____								
Analog	* Check the optical system, change PWB-IA or B.								
Digital	Change PWB-B.								
Orig. Size Adjust	<p>Adjusts the threshold of original detection level. * For details, see DIS/REASSEMBLY, ADJUSTMENT.</p>								
Function (EDH)	Displays the screens used to adjust and check the EDH.								
Position./Zoom (FD)	<p>Adjusts the zoom ration and the scanning position in the FD direction when the EDH is used. * For details, see the relevant option service manual.</p>								
Position (CD)	<p>Adjusts the scanning position in the CD direction when the EDH is used. * For details, see the relevant option service manual.</p>								
S-ADF Mode (CD)	<p>Adjusts the scanning position in the CD direction for a single feed scan. * For details, see the relevant option service manual.</p>								
S-ADF Mode (FD)	<p>Adjusts the scanning position in the FD direction for a single feed scan. * For details, see the relevant option service manual.</p>								
Skew Check	<p>Checks the EDH for correct alignment. * For details, see the relevant option service manual.</p>								
I/O Check (IR)	Checks the function of sensors.								
I/O Check (EDH)	<p>Checks the function of sensors. * For details, see the relevant option service manual.</p>								
Tech. Rep. Choice	Displays the screens for setting the various Tech. Rep. functions.								
Erasure Width	<p>Set the fixed erase width from the scales in the CD and FD directions. * For details, see DIS/REASSEMBLY, ADJUSTMENT.</p> <table border="1"> <tr> <td>0 to 5 ( <b>3 mm</b> )</td></tr> </table>	0 to 5 ( <b>3 mm</b> )							
0 to 5 ( <b>3 mm</b> )									
ID in Photo Mode	This function does not function because it is applicable on a case-by-case basis.								
EDH Paper Passage	<p>Makes a paper passage check through the EDH.</p> <p>&lt;Procedure&gt;</p> <ol style="list-style-type: none"> <li>Select the paper passage mode.</li> <li>Place paper on the Document Feed Tray.</li> <li>Press the Start key.</li> </ol>								

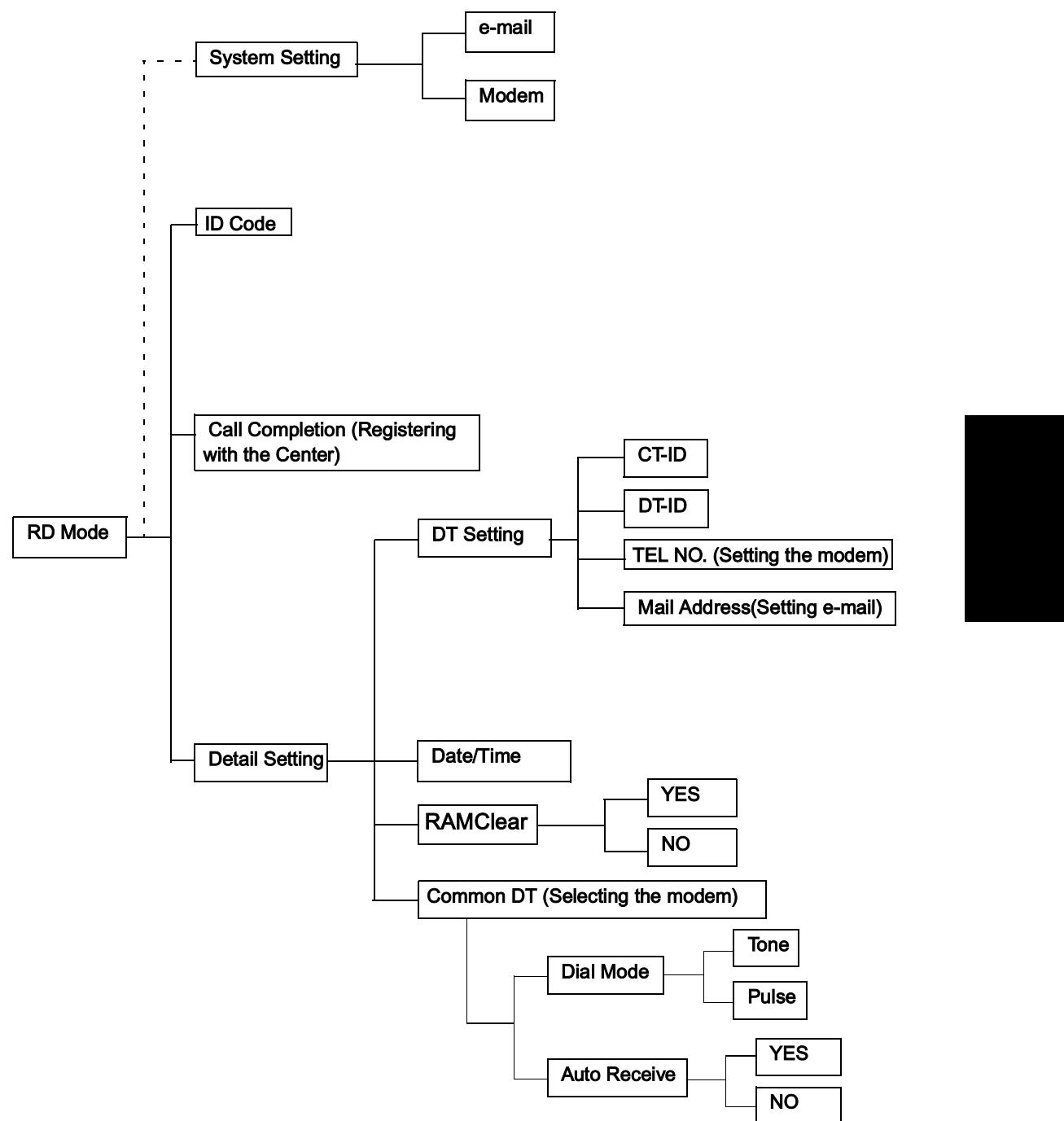
## (7) ROM Version

- Shows the ROM versions.

## (8) RD Mode

- Make the initial settings of the copier for the Data Terminal.

### 1. RD Mode Menu Function Tree



## 2. Setting in the RD Mode

Touch Panel Display	Setting	
System Set	Set the control system. <input type="checkbox"/> e-mail <input checked="" type="checkbox"/> Modem	
ID Code	Enter the ID code. <Procedure> 1. Touch the ID Code key. 2. Enter the ID code from the 10-Key Pad. 3. Touch the ID Code key. (This executes the transmission of MAINT. START to the Center.)	
Detail Setting	Displays the Detail Setting screen.	
DT Setting	Displays the setting screens for CT-ID, DT-ID, and telephone number. The mail address is also displayed if "e-mail" is set for System Set.	
CT-ID	Enter the ID number of the Center PC from the 10-Key Pad.	
DT-ID	Enter the ID number of the Data Terminal from the 10-Key Pad.	
TEL No.	Enter the telephone number of the modem connected to the Center PC.	
Call Completion	Transmits the signal of notifying the completion of service job to the Center.	
Date/Time	Set the date and time-of-day for Date Printing.	
RAM Clear	Initializes the Data Terminal settings. <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
Common DT	Displays the screens for communications settings.	
Dial Mode	Sets the type of telephone line of the user. <input type="checkbox"/> Tone <input checked="" type="checkbox"/> Pulse	
Auto Receive	Sets the auto reception function. <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	

## (9) Level History

- Displays the various level histories.

Touch Panel Display	Setting					
Fuser (Upper)	Displays the current value of the fusing temperature. <table border="1"> <tr> <td>Display Range</td> <td>Variable in</td> </tr> <tr> <td>50 to 250 °C</td> <td>5 °C increments</td> </tr> </table>		Display Range	Variable in	50 to 250 °C	5 °C increments
Display Range	Variable in					
50 to 250 °C	5 °C increments					
Fuser (Lower)	Displays the current value of the fusing temperature. <table border="1"> <tr> <td>Display Range</td> <td>Variable in</td> </tr> <tr> <td>30 to 200°C</td> <td>5 °C increments</td> </tr> </table>		Display Range	Variable in	30 to 200°C	5 °C increments
Display Range	Variable in					
30 to 200°C	5 °C increments					
ATDC Set	Displays the voltage set with ATDC Sensor Automatic Adjustment (F8). <table border="1"> <tr> <td>Display Range</td> <td>Variable in</td> </tr> <tr> <td>0 to 9.4 V</td> <td>0.1 V increments</td> </tr> </table>		Display Range	Variable in	0 to 9.4 V	0.1 V increments
Display Range	Variable in					
0 to 9.4 V	0.1 V increments					
ATDC Current	Displays the output voltage of the ATDC Sensor. <table border="1"> <tr> <td>Display Range</td> <td>Variable in</td> </tr> <tr> <td>0 to 4.7 V</td> <td>0.1 V increments</td> </tr> </table>		Display Range	Variable in	0 to 4.7 V	0.1 V increments
Display Range	Variable in					
0 to 4.7 V	0.1 V increments					
AIDC Fine Set	Displays the AIDC Sensor LED control voltage. <table border="1"> <tr> <td>Display Range</td> <td>Variable in</td> </tr> <tr> <td>0 to 4.7 V</td> <td>0.1 V increments</td> </tr> </table>		Display Range	Variable in	0 to 4.7 V	0.1 V increments
Display Range	Variable in					
0 to 4.7 V	0.1 V increments					
AIDC Coarse Set	Displays the load resistance level of the phototransistor used in the AIDC Sensor. <table border="1"> <tr> <td>Display Range</td> <td>Variable in</td> </tr> <tr> <td>0 to 12</td> <td>1 increments</td> </tr> </table>		Display Range	Variable in	0 to 12	1 increments
Display Range	Variable in					
0 to 12	1 increments					
AIDC Current	Displays the output voltage of the AIDC Sensor. <table border="1"> <tr> <td>Display Range</td> <td>Variable in</td> </tr> <tr> <td>0 to 4.7 V</td> <td>0.1 V increments</td> </tr> </table>		Display Range	Variable in	0 to 4.7 V	0.1 V increments
Display Range	Variable in					
0 to 4.7 V	0.1 V increments					
Vg Current	Displays the current value of the grid voltage. <table border="1"> <tr> <td>Display Range</td> <td>Variable in</td> </tr> <tr> <td>-366 to -924 V</td> <td>18 V increments</td> </tr> </table>		Display Range	Variable in	-366 to -924 V	18 V increments
Display Range	Variable in					
-366 to -924 V	18 V increments					
Vb Current	Displays the current value of the developing bias voltage. <table border="1"> <tr> <td>Display Range</td> <td>Variable in</td> </tr> <tr> <td>-256 to -752 V</td> <td>16 V increments</td> </tr> </table>		Display Range	Variable in	-256 to -752 V	16 V increments
Display Range	Variable in					
-256 to -752 V	16 V increments					

Touch Panel Display	Setting				
LD1	<p>Displays the intensity value of LD1.</p> <table border="1"> <tr> <td>Display Range</td> <td>Variable in</td> </tr> <tr> <td>0 to 255</td> <td>1 increments</td> </tr> </table>	Display Range	Variable in	0 to 255	1 increments
Display Range	Variable in				
0 to 255	1 increments				
LD2	<p>Displays the intensity value of LD2.</p> <table border="1"> <tr> <td>Display Range</td> <td>Variable in</td> </tr> <tr> <td>0 to 255</td> <td>1 increments</td> </tr> </table>	Display Range	Variable in	0 to 255	1 increments
Display Range	Variable in				
0 to 255	1 increments				

#### (10) Admin. Mode

- Makes the various settings.

Touch Panel Display	Setting
Copy Track	See User's Choice.
Copy Track Data	See User's Choice.
Max. Copy Sets	See User's Choice.
Administrator # Input	Set an ID number for opening the "Administrator Mode" screen of Utility Mode from the 10-Key Pad.
Data send	See User's Choice.
Telephone number of Copy Track on the LAN	See User's Choice.

#### (11) Finisher

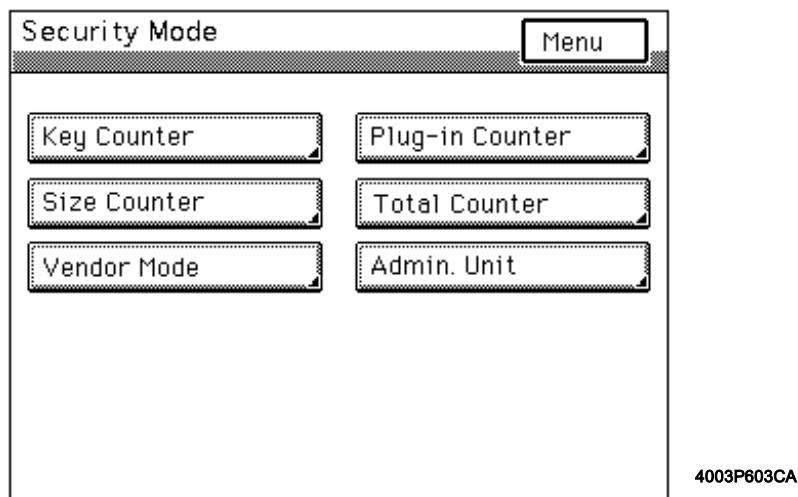
- Checks the Finisher for operation and makes necessary adjustments.

Touch Panel Display	Setting
Punch Loop Adj.	<p>Adjust the loop length for Hole Punch. * For details, see the relevant option service manual.</p>
I/O Check	Displays the screens for sensor monitor and port input check.
Sensors	<p>Checks the function of sensors (on the paper path). * For details, see the relevant option service manual.</p>
Port Signals	<p>Checks the function of sensors (installed in different places other than the paper path). * For details, see the relevant option service manual.</p>

## **5. SECURITY MODE**

- Allows the Tech. Rep. to set the various counters.

### **5-1. Security Mode Menu Screen**



### **5-2. Security Mode Setting Procedure**

<Procedure>

1. Show the Tech. Rep. mode menu screen.
2. Press the following keys in this order:  
Stop → 9
3. Select the particular function.

<Exiting the Mode>

- Press the Panel Reset key.

### 5-3. Settings in the Security Mode

Touch Panel Display	Setting (The default is <b>Highlighted</b> ).																																																																																										
Key Counter	Set to "ON" if a Key Counter is plugged in.  <b>NOTE:</b> • If "OFF" is set, copies can be made without having to plugging the Key Counter into the socket.																																																																																										
	<table border="1"><tr><td>ON</td><td>OFF</td></tr></table>		ON	OFF																																																																																							
ON	OFF																																																																																										
Plug-in Counter	Select the condition by which the Counter count is increased.																																																																																										
	<table border="1"><tr><td><b>Copy Made</b></td><td>Copy Cycles</td></tr></table>		<b>Copy Made</b>	Copy Cycles																																																																																							
<b>Copy Made</b>	Copy Cycles																																																																																										
Size Counter	Select the size of the paper to be counted by the Size Counter.																																																																																										
	<table border="1"><tr><td>No Count</td><td><b>A3/11 × 17</b></td><td>A6</td></tr><tr><td colspan="3">A3/B4/11 × 17/Legal</td></tr><tr><td colspan="3">A3/B4/FLS/11 × 17/Legal</td></tr></table>		No Count	<b>A3/11 × 17</b>	A6	A3/B4/11 × 17/Legal			A3/B4/FLS/11 × 17/Legal																																																																																		
No Count	<b>A3/11 × 17</b>	A6																																																																																									
A3/B4/11 × 17/Legal																																																																																											
A3/B4/FLS/11 × 17/Legal																																																																																											
Total Counter	Select the condition by which the Counter count is increased.																																																																																										
	<table border="1"><tr><td><b>Mode 1</b></td><td>1 Copy per 1 copy cycle</td></tr><tr><td>Mode 2</td><td>Multiple count-up according to paper size 1/2-sided copying</td></tr><tr><td>Mode 3</td><td>Multiple count-up according to paper size 1/2-sided copying</td></tr></table>		<b>Mode 1</b>	1 Copy per 1 copy cycle	Mode 2	Multiple count-up according to paper size 1/2-sided copying	Mode 3	Multiple count-up according to paper size 1/2-sided copying																																																																																			
<b>Mode 1</b>	1 Copy per 1 copy cycle																																																																																										
Mode 2	Multiple count-up according to paper size 1/2-sided copying																																																																																										
Mode 3	Multiple count-up according to paper size 1/2-sided copying																																																																																										
	<b>&lt;Count-up Table&gt;</b>																																																																																										
	<table border="1"><thead><tr><th colspan="3">Copying</th><th colspan="3">1-Sided</th><th colspan="3">2-Sided</th></tr><tr><th colspan="3">Size</th><th>Sizes Other than those set</th><th colspan="2">Set sizes</th><th>Sizes Other than those set</th><th colspan="2">Set sizes</th></tr><tr><th colspan="3">Total</th><th>Mode</th><th colspan="2">Mode</th><th>Mode</th><th colspan="2">Mode</th></tr></thead><tbody><tr><td colspan="3"></td><td>1</td><td>2</td><td>3</td><td>1</td><td>2</td><td>3</td></tr><tr><td colspan="3">Total Counter</td><td>1</td><td>1</td><td>2</td><td>2</td><td>2</td><td>4</td></tr><tr><td colspan="3">Size Counter</td><td>0</td><td>1</td><td>1</td><td>0</td><td>2</td><td>2</td></tr><tr><td colspan="3">2-sided Total Counter</td><td>0</td><td colspan="2">0</td><td>1</td><td>1</td><td>4</td></tr><tr><td colspan="3">2-sided Size Counter</td><td>0</td><td colspan="2">0</td><td>0</td><td>1</td><td>1</td></tr><tr><td rowspan="2">Plug-in Counter</td><td>Counting copies</td><td>1</td><td>1</td><td>2</td><td>2</td><td>1</td><td>2</td><td>1</td></tr><tr><td>Counting copy cycle</td><td>1</td><td>1</td><td>2</td><td>2</td><td>2</td><td>4</td><td>4</td></tr></tbody></table>		Copying			1-Sided			2-Sided			Size			Sizes Other than those set	Set sizes		Sizes Other than those set	Set sizes		Total			Mode	Mode		Mode	Mode					1	2	3	1	2	3	Total Counter			1	1	2	2	2	4	Size Counter			0	1	1	0	2	2	2-sided Total Counter			0	0		1	1	4	2-sided Size Counter			0	0		0	1	1	Plug-in Counter	Counting copies	1	1	2	2	1	2	1	Counting copy cycle	1	1	2	2	2	4	4
Copying			1-Sided			2-Sided																																																																																					
Size			Sizes Other than those set	Set sizes		Sizes Other than those set	Set sizes																																																																																				
Total			Mode	Mode		Mode	Mode																																																																																				
			1	2	3	1	2	3																																																																																			
Total Counter			1	1	2	2	2	4																																																																																			
Size Counter			0	1	1	0	2	2																																																																																			
2-sided Total Counter			0	0		1	1	4																																																																																			
2-sided Size Counter			0	0		0	1	1																																																																																			
Plug-in Counter	Counting copies	1	1	2	2	1	2	1																																																																																			
	Counting copy cycle	1	1	2	2	2	4	4																																																																																			
	0: No count 1: 1 count 2: 2 counts 4: 4 counts																																																																																										

Touch Panel Display	Setting (The default is <b>Highlighted</b> ).		
Vender Mode	Set the initial screen according to the type of vender mounted on the copier.		
Admin. Unit	Select the model of the Data Controller mounted on the copier.		

## 6. ADJUST MODE

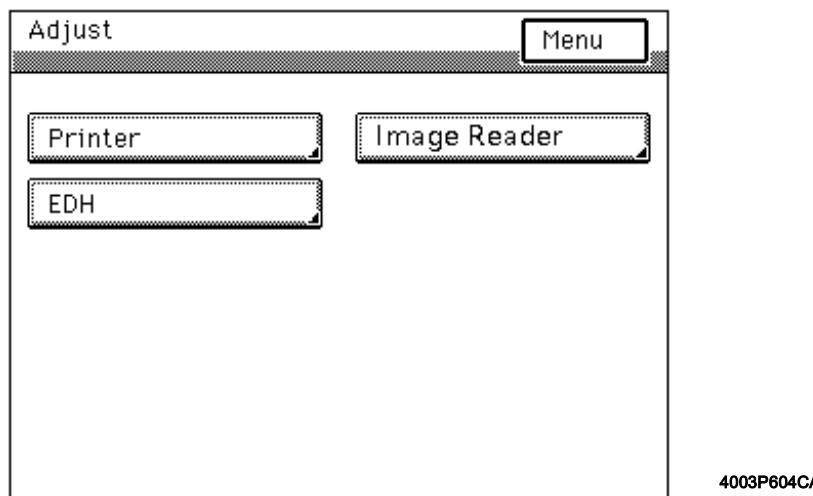
- Used at the factory for making adjustments.

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**NOTE:**

- Use only when the RAM Board has been replaced. If any of the adjustment values has been changed, be sure to enter the value in the label affixed to the copier.*
- 

### 6-1. Adjust Mode Menu Screen



### 6-2. Adjust Mode Setting Procedure

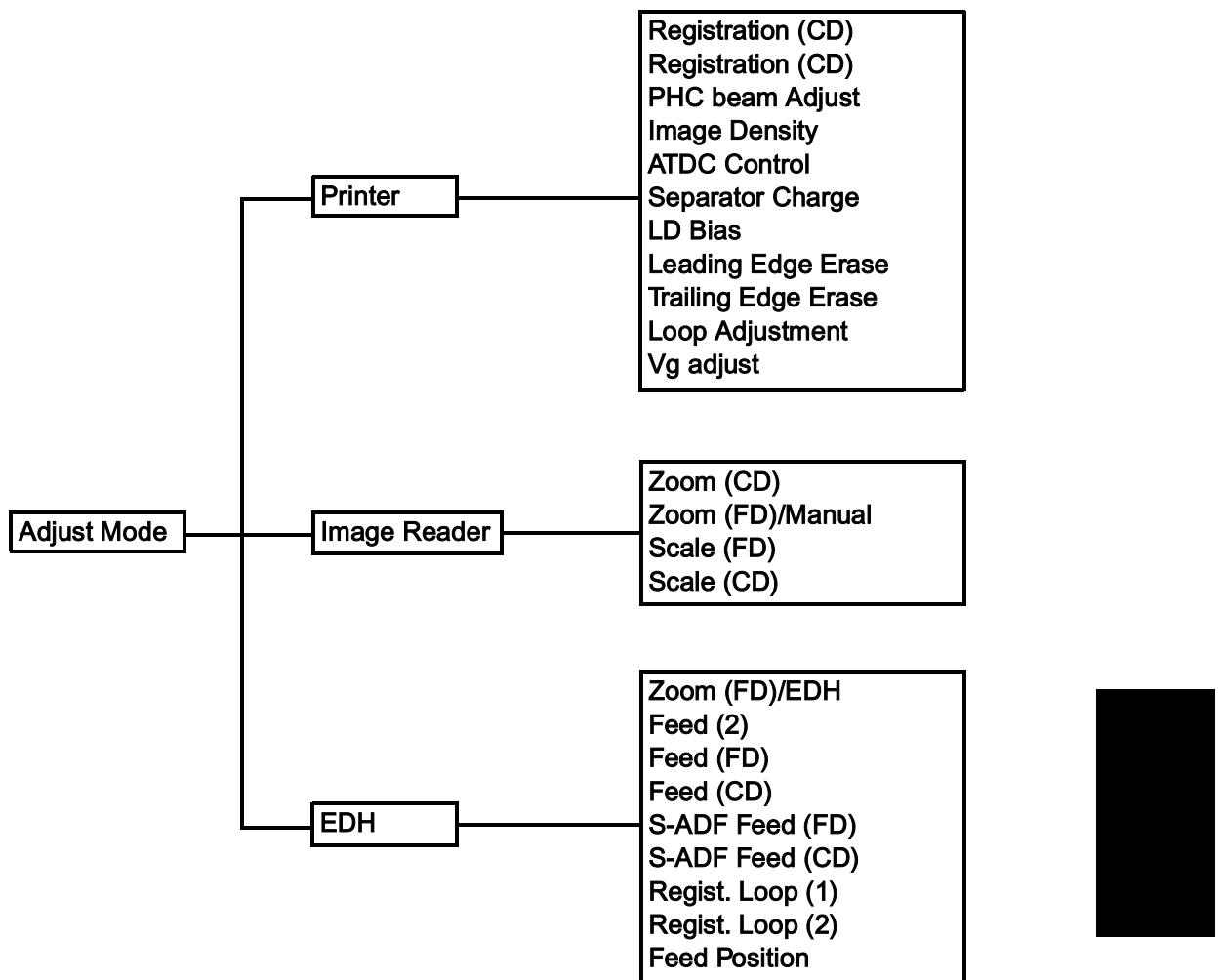
**<Procedure>**

- Show the Tech. Rep. mode menu screen.
- Press the following keys in this order:  
Stop → Start
- Select the desired function.

**<Exiting the Mode>**

- Press the Panel Reset key.

### 6-3. Adjust Mode Function Tree



## 6-4. Settings in the Adjust Mode

### <Function>

Printer: Adjust functions relating to the printer.

I.R.: Adjust functions relating to the I.R.

EDH: Adjust functions relating to the EDH.

Touch Panel Display	Setting (The default is <b>Highlighted</b> ).								
Registration (CD)	<p>Adjust registration in the CD direction on the engine side.</p> <table border="1"> <tr> <td>Setting</td> <td>-8.2 .....</td> <td><b>0</b></td> <td>.....+8.2</td> </tr> <tr> <td>Description</td> <td>Smaller</td> <td>←</td> <td>→ Greater</td> </tr> </table>	Setting	-8.2 .....	<b>0</b>	.....+8.2	Description	Smaller	←	→ Greater
Setting	-8.2 .....	<b>0</b>	.....+8.2						
Description	Smaller	←	→ Greater						
Registration (FD)	<p>Adjust registration in the FD direction on the engine side.</p> <table border="1"> <tr> <td>Setting</td> <td>-8.2 .....</td> <td><b>0</b></td> <td>.....+8.2</td> </tr> <tr> <td>Description</td> <td>Smaller</td> <td>←</td> <td>→ Greater</td> </tr> </table>	Setting	-8.2 .....	<b>0</b>	.....+8.2	Description	Smaller	←	→ Greater
Setting	-8.2 .....	<b>0</b>	.....+8.2						
Description	Smaller	←	→ Greater						
PHC beam Adjust	<p>Adjust the intervals which the laser beam is illuminated (for the main-scanning and sub-scanning).</p> <table border="1"> <tr> <td>Setting</td> <td>-5 .....</td> <td><b>0</b></td> <td>.....+5</td> </tr> <tr> <td>Description</td> <td>Smaller</td> <td>←</td> <td>→ Greater</td> </tr> </table>	Setting	-5 .....	<b>0</b>	.....+5	Description	Smaller	←	→ Greater
Setting	-5 .....	<b>0</b>	.....+5						
Description	Smaller	←	→ Greater						
Image Density	<p>Set the image density for the printer. The value set for this function becomes the central value of "Print Exposure" of User's Choice.</p> <table border="1"> <tr> <td>Setting</td> <td>-3 .....</td> <td><b>0</b></td> <td>.....+3</td> </tr> <tr> <td>Description</td> <td>Lighter</td> <td>←</td> <td>→ Darker</td> </tr> </table>	Setting	-3 .....	<b>0</b>	.....+3	Description	Lighter	←	→ Darker
Setting	-3 .....	<b>0</b>	.....+3						
Description	Lighter	←	→ Darker						
ATDC Control	<p>Current: Displays the current ATDC control voltage. Set: Displays the set value entered. If a spare Developing Unit is to be used, input the F8 adjustment value for that particular Developing Unit.</p> <p>&lt;Procedure&gt;</p> <ol style="list-style-type: none"> <li>1. Clear the Set value using the Clear key.</li> <li>2. Enter the F8 value of the Developing Unit to be used from the 10-Key Pad.</li> </ol> <table border="1"> <tr> <td>0 to 9.4 (V)</td> </tr> </table>	0 to 9.4 (V)							
0 to 9.4 (V)									
Separator Charge	<p>Adjust the output voltage of the Paper Separator Corona.</p> <table border="1"> <tr> <td>-12 to +12</td> </tr> </table>	-12 to +12							
-12 to +12									
LD Bias	<p>Current: Displays the current intensity of the laser light. Set: Displays the adjustment value for the intensity of the laser light.</p> <table border="1"> <tr> <td>0 to 255</td> </tr> </table>	0 to 255							
0 to 255									

Touch Panel Display	Setting (The default is <b>Highlighted</b> ).								
Leading Edge Erase	Select whether to enable or disable the leading edge erase.  0 to 5 ( <b>3 mm</b> )								
Trailing Edge Erase	Select whether to enable or disable the trailing edge erase.  0 to 5 ( <b>3 mm</b> )								
Loop Adjustment	Set the length of the loop to be formed in paper before the Synchronizing Rollers.  <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>Setting</td> <td>-3 .....</td> <td><b>0</b></td> <td>.....+3</td> </tr> <tr> <td>Description</td> <td>Smaller</td> <td style="text-align: center;">←</td> <td>Greater</td> </tr> </table>	Setting	-3 .....	<b>0</b>	.....+3	Description	Smaller	←	Greater
Setting	-3 .....	<b>0</b>	.....+3						
Description	Smaller	←	Greater						
VG Adjust	Vary the Vg voltage to set the desired image density.  <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>Setting</td> <td>-4 .....</td> <td><b>0</b></td> <td>.....+4</td> </tr> <tr> <td>Description</td> <td>Lighter</td> <td style="text-align: center;">←</td> <td>Darker</td> </tr> </table>	Setting	-4 .....	<b>0</b>	.....+4	Description	Lighter	←	Darker
Setting	-4 .....	<b>0</b>	.....+4						
Description	Lighter	←	Darker						
Zoom (CD)	Set the correction value for the zoom ratio in the CD direction on the IR side.  0.990 to 1.010 ( <b>1.000</b> )								
Zoom (FD)/Manual	Set the correction value for the zoom ratio in the FD direction on the IR side.  0.990 to 1.010 ( <b>1.000</b> )								
Scale (FD)	Set the correction value for the start-of-scan position of the original in the FD direction with respect to the Original Width Scale position.  -4.0 to +4.0 ( <b>0.0 mm</b> )								
Scale (CD)	Set the correction value for the start-of-scan position of the original in the CD direction with respect to the Original Length Scale position.  -10.0 to +10.0 ( <b>0.0 mm</b> )								
Zoom (FD) EDH	Set the correction value for the zoom ratio in the FD direction when the EDH is used.  0.980 to 1.020 ( <b>1.000</b> )								
Feed (2)	Set the correction value for the original scanning position for the second page of a 2-sided original when the EDH is used.  -5.0 to +5.0 ( <b>0.0 mm</b> )								

Touch Panel Display	Setting (The default is <b>Highlighted</b> ).				
Feed (FD)	<p>Set the correction value for the original scanning position in the FD direction when the EDH is used.</p> <div style="border: 1px solid black; padding: 2px; text-align: center;">-4.0 to +4.0 ( <b>0.0 mm</b> )</div>				
Feed (CD)	<p>Set the correction value for the original scanning position in the CD direction when the EDH is used.</p> <div style="border: 1px solid black; padding: 2px; text-align: center;">-3.0 to +3.0 ( <b>0.0 mm</b> )</div>				
S-ADF Feed (FD)	<p>Set the correction value for the original scanning position in the FD direction in the single feed mode.</p> <div style="border: 1px solid black; padding: 2px; text-align: center;">-4.0 to +4.0 ( <b>0.0 mm</b> )</div>				
S-ADF Feed (CD)	<p>Set the correction value for the original scanning position in the CD direction in the single feed mode.</p> <div style="border: 1px solid black; padding: 2px; text-align: center;">-3.0 to +3.0 ( <b>0.0 mm</b> )</div>				
Regist Loop (1)	<p>Set the length of the loop formed in the 1-sided original before the Registration Roller of the EDH.</p> <div style="border: 1px solid black; padding: 2px; text-align: center;">-5.0 to +5.0 ( <b>0.0 mm</b> )</div>				
Regist Loop (2)	<p>Set the length of the loop formed in the 2-sided original before the Registration Roller of the EDH.</p> <div style="border: 1px solid black; padding: 2px; text-align: center;">-5.0 to +5.0 ( <b>0.0 mm</b> )</div>				
Feed Position	<p>Set the target stop position of the Scanner during scanning by the EDH.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Setting</td> <td style="padding: 2px;"><b>0</b> ..... 4</td> </tr> <tr> <td style="padding: 2px;">Description</td> <td style="padding: 2px;">Smaller ← → Greater</td> </tr> </table>	Setting	<b>0</b> ..... 4	Description	Smaller ← → Greater
Setting	<b>0</b> ..... 4				
Description	Smaller ← → Greater				

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# TROUBLESHOOTING

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# 1. INTRODUCTION

## 1-1. Reading the Text

1. The paper transport failure troubleshooting procedures are given according to the symptom. First identify the location where the paper is present and start the procedure for that particular location. For malfunction troubleshooting, start with step 1 and onward.
2. Make checks in the numerical order of steps and, if an item is checked okay, go to the next step.

Pattern 1

Step	Check	Result	Action
1	~	YES	~
2		↑	

Go to step 2 if you answered No.

Pattern 2

Step	Check	Result	Action
1	~	YES	~
		NO	~
2			↑

Go to step 2 if it checks okay.

# 2. I/O CHECK

## 2-1. Controlled Parts Check Procedure

To allow the Tech. Rep. to easily and safely determine whether a particular controlled part is fully operational, this copier provides the following provision. Checking the data of the input port of the board IC with the copier in the standby state (including a misfeed, malfunction, and closure failure condition) allows the Tech. Rep. to determine whether signals are properly input to a controlled part.

<Procedure>

1. When a misfeed or malfunction occurs, locate on a circuit diagram accompanying the text the controlled part which is probably defective.
2. Select "I/O Check" from the Tech. Rep. Mode menu screen and access the screen that contains the controlled part picked out in step 1 above. (See SWITCHES ON PWBS/ TECH. REP. MODE.)
3. Check the input port data to determine if a signal is properly input to the controlled part.

<Controlled Part Check Procedure Through Checking Input Port Data>

**Example**

When a paper misfeed occurs in the paper take-up section of the copier, the Synchronizing Roller Sensor (PC1) is considered to be responsible for it.

<Procedure>

1. Remove the sheet of paper misfed.
2. From the I/O Check list, it is found that the signal input to PC1 is "Timing Roller."
3. Select "Tech. Rep. Mode" → "I/O Check" → "Printer." Then access the screen that contains "Timing Roller."
4. Check that the input port data of "Timing Roller" is "0" (sensor is blocked).
5. Move the PC1 actuator to unblock the sensor.
6. Check at this time that the input port data on the screen changes from "0" to "1."

1: PC1 is operational. 0: PC1 is faulty.

## 2-2. I/O Check List

<I/O Check Screens>

- The following screen is only typical and the port data shown does not necessarily represent the actual one.

[IR]

I.R.& EDH Check /I/O Check IR					END
Orig. Size S1	1	15° Sensor	1		
Orig. Size S2	1				
Orig. Size S3	1				
Orig. Size S4	1				
Orig. Size S5	1				
Orig. Size S6	1				
Orig. Size S7	1				
Orig. Size S8	1				
Home	1				
EDH Open/Close	0				

4002T003CA

<I/O Check List>

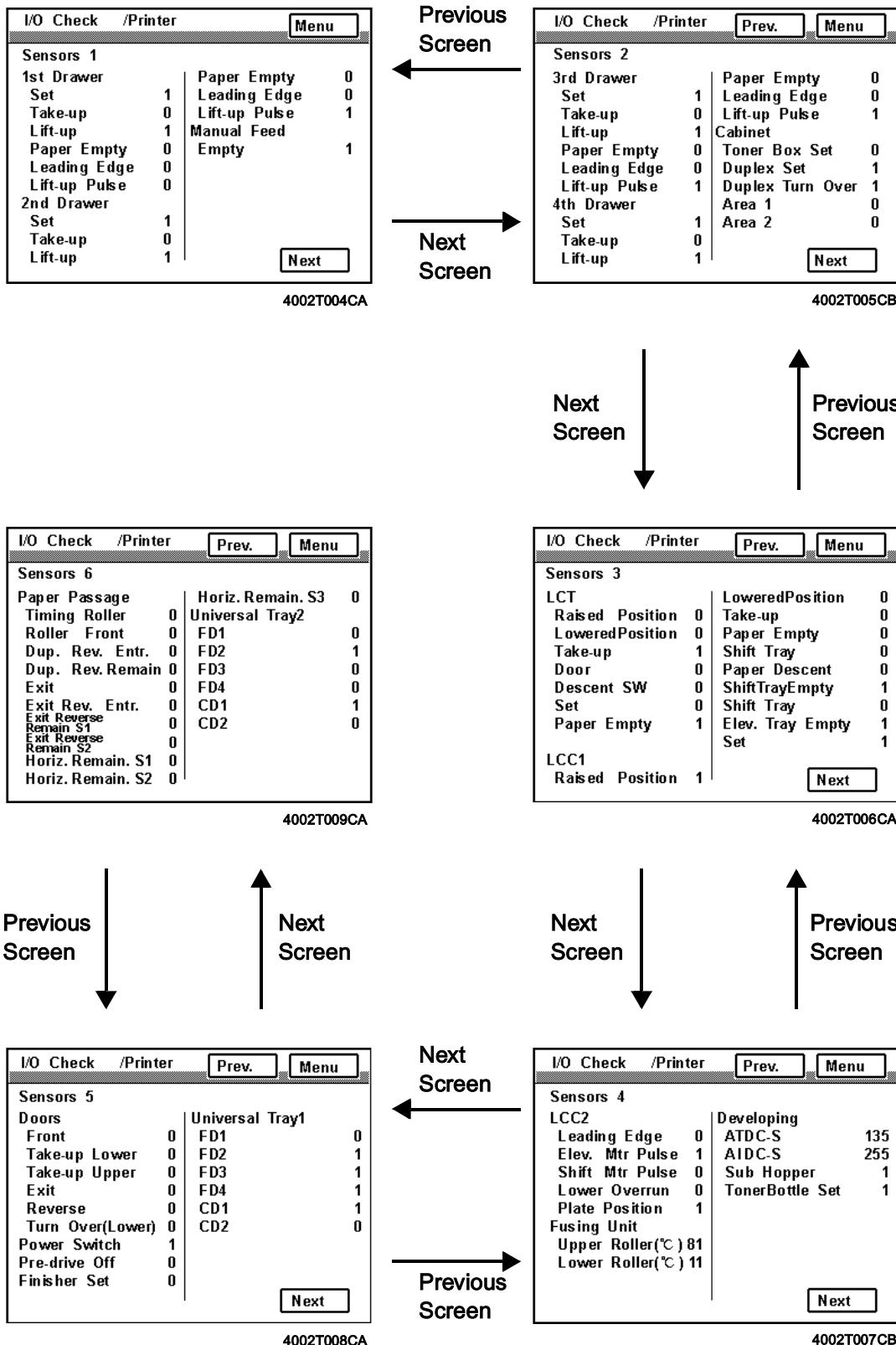
[IR]

Symbol	Panel Display	Parts/Signal Name	Operation Characteristics/Panel Display		Input Board	IC No.	Port No.	CN/PJ No.
			1	0				
PC53	Orig. Size S1	Original Size Detecting Sensor FD1	Original present	Original not present	Image Processing Board (PWB-B)	—	—	PJ6B-1
PC54	Orig. Size S2	Original Size Detecting Sensor FD2	Original present	Original not present		—	—	PJ6B-14
PC54	Orig. Size S3	Original Size Detecting Sensor FD2	Original present	Original not present		—	—	PJ6B-14
PC55	Orig. Size S4	Original Size Detecting Sensor FD3	Original present	Original not present		—	—	PJ7B-10
PC55	Orig. Size S5	Original Size Detecting Sensor FD3	Original present	Original not present		—	—	PJ7B-10
PC56	Orig. Size S6	Original Size Detecting Sensor CD1	Original present	Original not present		—	—	PJ6B-9
PC56	Orig. Size S7	Original Size Detecting Sensor CD1	Original present	Original not present		—	—	PJ6B-9
PC57	Orig. Size S8	Original Size Detecting Sensor CD2	Original present	Original not present		—	—	PJ7B-5
PC51	Home	Scanner Reference Position Sensor	At home	Not at home		—	—	PJ306B-9
S51	EDH Open/Close	Size Reset Switch	When raised	When lowered		—	—	PJ306B-7
PC52	15° Sensor	Original Cover Detecting Sensor	Less than 15°	15° or more		—	—	PJ5B-2

### <I/O Check Screens>

- The following screens are only typical and the port data shown does not necessarily represent the actual one.

[Printer]



<I/O Check List>

[Printer]

Symbol	Panel Display	Parts/Signal Name	Operation Characteristics/Panel Display		Input Board	IC No.	Port No.	CN/PJ No.	
			1	0					
PC10	1 <sup>st</sup> Drawer	Set	1 <sup>st</sup> Drawer Set Sensor	In position	Out of position	Master Board (PWB-A)	IC3	PJ0	PJ3A-9A
PC3		Take-up	1 <sup>st</sup> Drawer Paper Take-Up Sensor	Paper present	Paper not present		IC3	PI4	PJ3A-6A
PC14		Lift-up	1 <sup>st</sup> Drawer Paper Lift-Up Sensor	At upper limit	Not at upper limit		IC3	PI6	PJ4A-6B
PC16		Paper Empty	1 <sup>st</sup> Drawer Paper Empty Sensor	Paper not present	Paper present		IC3	PJ2	PJ4A-9B
PC5		Leading Edge	Paper Leading Edge Sensor SW1	Paper present	Paper not present		IC3	PI4	PJ3A-3A
PC12		Lift-up Pulse	1 <sup>st</sup> Drawer Lift-Up Motor Pulse Sensor	Blocked	Unblocked		IC3	PI0	PJ3A-11A
PC11	2 <sup>nd</sup> Drawer	Set	2 <sup>nd</sup> Drawer Set Sensor	In position	Out of position	Control Board (PWB-A)	IC3	PJ1	PJ3A-9B
PC4		Take-up	2 <sup>nd</sup> Drawer Paper Take-Up Sensor	Paper present	Paper not present		IC3	PI3	PJ3A-6B
PC15		Lift-up	2 <sup>nd</sup> Drawer Paper Lift-Up Sensor	At upper limit	Not at upper limit		IC3	PI7	PJ4A-12B
PC17		Paper Empty	2 <sup>nd</sup> Drawer Paper Empty Sensor	Paper not present	Paper present		IC3	PJ3	PJ4A-15B
PC6		Leading Edge	Paper Leading Edge Sensor SW2	Paper present	Paper not present		IC3	PI5	PJ3A-3B
PC13		Lift-up Pulse	2 <sup>nd</sup> Drawer Lift-Up Motor Pulse Sensor	Blocked	Unblocked		IC3	PI1	PJ3A-11B
PC18	Manual Feed	Empty	Manual Feed Paper Empty Sensor	Paper present	Paper not present		IC3	PK7	PJ2A-3
PC121	3 <sup>rd</sup> Drawer (PF-208)	Set	3 <sup>rd</sup> Drawer Set Sensor	In position	Out of position		IC1	PB3	PJ5A-6B
PC117		Take-up	3 <sup>rd</sup> Drawer Paper Take-Up Sensor	Paper present	Paper not present		IC1	PE0	PJ9A-11
PC115		Lift-up	3 <sup>rd</sup> Drawer Paper Lift-Up Sensor	At upper limit	Not at upper limit		IC1	PD4	PJ8A-2
PC116		Paper Empty	3 <sup>rd</sup> Drawer Paper Empty Sensor	Paper present	Paper not present		IC1	PD3	PJ8A-5
PC113		Leading Edge	Paper Leading Edge Sensor 3	Paper present	Paper not present		IC1	PD6	PJ9A-5
PC123		Lift-up Pulse	3 <sup>rd</sup> Drawer Lift-Up Motor Pulse Sensor	Blocked	Unblocked		IC1	PB2	PJ5A-9B
PC122	4 <sup>th</sup> Drawer (PF-208)	Set	4 <sup>th</sup> Drawer Set Sensor	In position	Out of position	Control Board (PWB-A)	IC1	PB3	PJ5A-8A
PC125		Take-up	4 <sup>th</sup> Drawer Paper Take-Up Sensor	Paper present	Paper not present		IC1	PB0	PJ5A-2A
PC119		Lift-up	4 <sup>th</sup> Drawer Paper Lift-Up Sensor	At upper limit	Not at upper limit		IC1	PB6	PJ6A-2
PC120		Paper Empty	4 <sup>th</sup> Drawer Paper Empty Sensor	Paper not present	Paper present		IC1	PB5	PJ6A-5
PC118		Leading Edge	Paper Leading Edge Sensor 4	Paper present	Paper not present		IC1	PD7	PJ9A-8

Symbol	Panel Display	Parts/Signal Name	Operation Characteristics/Panel Display		Input Board	IC No.	Port No.	CN/PJ No.	
			1	0					
PC124	4 <sup>th</sup> Drawer (PF-208)	Lift-up Pulse	4 <sup>th</sup> Drawer Lift-Up Motor Pulse Sensor	Blocked	Unblocked	Control Board (PWB-A)	IC1	PB1	PJ5A-5A
PC135	Cabinet	Toner Box Set	Toner Collecting Bottle Set Sensor	Out of position	In position	Drive Control Board (PWB-A)	IC1	PG1	PJ13A-2
—		Duplex Set	—	In position	Out of position		IC1	PE5	PJ12A-1
—		Duplex Turn Over	—	In position	Out of position		IC1	PE4	PJ11A-7B
—		Area 1	—	—	—		IC1	PG6	—
—		Area 2	—	—	—		IC1	PG7	—
PC1	LCT (C-306 · C-306L)	Raised Position	Paper Plate Raised Position Sensor	At raised position	Not at raised position	Drive Control Board (PWB-A)	IC1	PC0	PJ2A-8A
PC6		Low-ered Position	Paper Plate Low-ered Position Sensor	At lowered position	Not at low-ered position		IC1	PG6	PJ2A-5A
PC4		Take-up	Paper Take-Up Sensor	Paper present	Paper not present		IC1	PG0	PJ2A-2B
PC5		Door	Cassette Door Sensor	When closed	When opened		IC1	PG2	PJ2A-2A
PWB-B		Descent SW	Paper Plate Descent Key Board	ON	OFF		IC1	PG1	PJ3A-2
PC3		Set	Set Sensor	In position	Out of position		IC1	PC2	PJ2A-5B
PC2		Paper Empty	Paper Empty Sensor	Paper present	Paper not present		IC1	PC1	PJ2A-8B
PC115		Raised Position	3 <sup>rd</sup> Drawer Paper Lift-Up Sensor	At raised position	Not at raised position	Control Board (PWB-A)	IC1	PD4	PJ8A-2
PC139	LCC1 (PF-115)	Low-ered Position	Elevator Lower Position Sensor	At lowered position	Not at low-ered position		IC1	PD0	PJ7A-9A
PC117		Take-up	3 <sup>rd</sup> Drawer Paper Take-Up Sensor	Paper present	Paper not present		IC1	PE0	PJ9A-11
PC116		Paper Empty	3 <sup>rd</sup> Drawer Paper Empty Sensor	Paper not present	Paper present		IC1	PD3	PJ8A-5
PC141		Shift Tray	Shifter Return Position Sensor	Not at return position	At return position		IC1	PD2	PJ7A-7A
UN21		Paper Descent	Paper Descent Key	ON	OFF		IC1	PB7	PJ7A-10A
PC138	PWB-E	Shift Tray Empty	Shift Tray Paper Empty Sensor	Paper not present	Paper present		IC1	PB1	PJ7A-4A
PC140		Shift Tray	Shifter Home Position Sensor	At home	Not at home		IC1	PD1	PJ7A-8A
PWB-E		Elev. Tray Empty	Elevator Tray Paper Empty Board	Paper not present	Paper present		IC1	PB6	PJ7A-6A
PC144		Set	3 <sup>rd</sup> Drawer Set Sensor	In position	Out of position		IC1	PB4	PJ10A-3



Symbol	Panel Display	Parts/Signal Name	Operation Characteristics/Panel Display		Input Board	IC No.	Port No.	CN/PJ No.		
			1	0						
PC113	LCC2 (PF-115)	Leading Edge	Paper Leading Edge Sensor 3	Paper present	Paper not present	Control Board (PWB-A)	IC1	PD6	PJ9A-5	
PC142		Elev. Mtr Pulse	Elevator Motor Pulse Sensor	Blocked	Unblocked		IC1	PB3	PJ7A-5A	
PC143		Shift Mtr Pulse	Shift Motor Pulse Sensor	Blocked	Unblocked		IC1	PB5	PJ7A-3A	
PC137		Lower Overrun	Lower Position Overrun Detecting Sensor	At lowered position	Not at lowered position		IC1	PB0	PJ7A-2A	
PC136		Plate Position	Shift Gate Position Sensor	At home	Not at home		IC1	PB2	PJ7A-1B	
TH1	Fusing Unit	Upper Roller (°C)	Upper Fusing Roller Thermistor	Voltage value (A/D conversion)		Master Board (PWB-A)	IC1	PORT12	PJ7A-9A	
TH2		Lower Roller (°C)	Lower Fusing Roller Thermistor	Voltage value (A/D conversion)			IC1	PORT13	PJ7A-12A	
UN2	Developing	ATDC-S	ATDC Sensor	Voltage value (A/D conversion)			IC1	PORT10	PJ7A-10B	
PWB-G		AIDC-S	AIDC Sensor Board	Voltage value (A/D conversion)			IC1	PORT11	PJ7A-7B	
S4		Sub Hopper	Sub Hopper Toner Empty Switch	Toner loaded	Toner not loaded		IC1	PB7	PJ7A-12B	
PC21		Toner Bottle Set	Toner Bottle Home Position Sensor	At home	Not at home		IC3	PK6	PJ11A-5A	
S21	Doors	Front	Front Door Interlock Switch	When opened	When closed	Control Board (PWB-A)	IC3	PA0	PJ6A-1	
PC114		Take-up Lower	Paper Take-Up Door Sensor	When opened	When closed		IC1	PD5	PJ9A-2	
PC29		Take-up Upper	Upper Right Door Set Sensor	When opened	When closed		IC3	PA1	PJ11A-8	
S22		Exit	Upper Left Door Interlock Switch	When opened	When closed	Master Board (PWB-A)	IC3	PA2	PJ6A-2	
PC19		Reverse	Lower Left Door Set Sensor	When opened	When closed		IC3	PA3	PJ9A-6	
PC111		Turn Over (Lower)	Turnover Door Sensor	When opened	When closed		IC1	PE3	PJ11A-10B	
S1	Power Switch	—	Power Switch	ON	OFF	Master Board (PWB-A)	IC101	R41	—	
PC20	Pre-drive OFF	—	Pre-Drive OFF Rear Sensor	Blocked	Unblocked		IC3	PB0	PJ2A-3B	
S1	Finisher Set	—	Set Switch	Out of position	In position	Control Board (PWB-A)	—	—	—	
PWB-I1	Universal Tray 1	FD1	Paper Size Detecting Board 1	ON	OFF	Master Board (PWB-A)	IC3	PJ4	PJ4A-1A	
PWB-I1		FD2	Paper Size Detecting Board 1	ON	OFF		IC3	PJ5	PJ4A-2A	
PWB-I1		FD3	Paper Size Detecting Board 1	ON	OFF		IC3	PJ6	PJ4A-3A	
PWB-I1		FD4	Paper Size Detecting Board 1	ON	OFF		IC3	PJ7	PJ4A-4A	

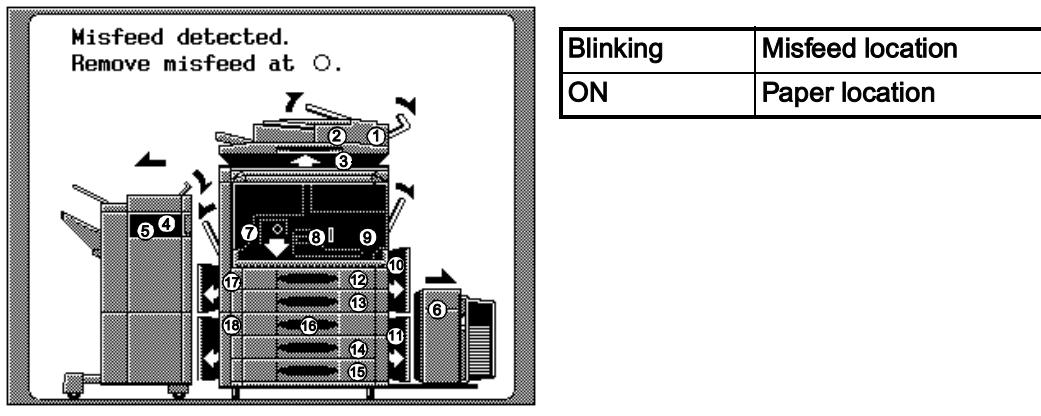
Symbol	Panel Display	Parts/Signal Name	Operation Characteristics/Panel Display		Input Board	IC No.	Port No.	CN/PJ No.	
			1	0					
PC23	Universal Tray 1	CD1	Paper Size Detecting Sensor CDA1	Blocked	Unblocked	Master Board (PWB-A)	IC3	PK0	PJ12A-3A
PC24		CD1	Paper Size Detecting Sensor CDB1	Blocked	Unblocked		IC3	PB3	PJ12A-6A
PC1	Paper Passage	Timing Roller	Synchronizing Roller Sensor	Paper present	Paper not present	Master Board (PWB-A)	IC1	PORT17	PJ4A-3B
PC2		Roller Front	Transport Roller Sensor	Paper present	Paper not present		IC1	PORT16	PJ4A-13A
PC112		Dup. Rev. Entr.	Duplex Unit Turnover Entry Sensor	Paper present	Paper not present	Control Board (PWB-A)	IC1	PF2	PJ11A-2A
PC131		Dup. Rev. Remain	Turnover Feed Jam Sensor	Paper present	Paper not present		IC1	PE1	PJ11A-5A
PC9		Exit	Paper Exit Sensor	Paper present	Paper not present		IC3	PB5	PJ9A-3A
PC7		Exit Rev. Entr.	Turnover Feed Entry Sensor	Paper present	Paper not present		IC3	PA6	PJ8A-9
PC8		Exit Reverse Remain S1	Turnover Feed Jam Sensor	Paper present	Paper not present		IC3	PA7	PJ8A-6
PC27		Exit Reverse Remain S2	Turnover/Exit Sensor	Paper present	Paper not present		IC3	PA4	PJ8A-3
PC132	Universal Tray 2	Horiz. Remain. S1	Horizontal Transport Entry Sensor	Paper present	Paper not present	Control Board (PWB-A)	IC1	PG0	PJ12A-6
PC133		Horiz. Remain. S2	Horizontal Transport Jam Sensor	Paper present	Paper not present		IC1	PE6	PJ12A-3
PC134		Horiz. Remain. S3	Horizontal Transport Exit Sensor	Paper present	Paper not present		IC1	PE7	PJ12A-4
PWB-I2		FD1	Paper Size Detecting Board 2	ON	OFF	Master Board (PWB-A)	IC3	PK1	PJ4A-6A
PWB-I2		FD2	Paper Size Detecting Board 2	ON	OFF		IC3	PK2	PJ4A-7A
PWB-I2		FD3	Paper Size Detecting Board 2	ON	OFF		IC3	PK3	PJ4A-8A
PWB-I2		FD4	Paper Size Detecting Board 2	ON	OFF		IC3	PK4	PJ4A-9A
PC25		CD2	Paper Size Detecting Sensor CDA2	Blocked	Unblocked		IC3	PK5	PJ12A-9A
PC26		CD2	Paper Size Detecting Sensor CDB2	Blocked	Unblocked		IC3	PB4	PJ12A-12A



### 3. PAPER TRANSPORT FAILURE

#### 3-1. Paper Misfeed

When a paper misfeed occurs, the Touch Panel shows the corresponding message, misfeed location, and paper location.



4002T011CA

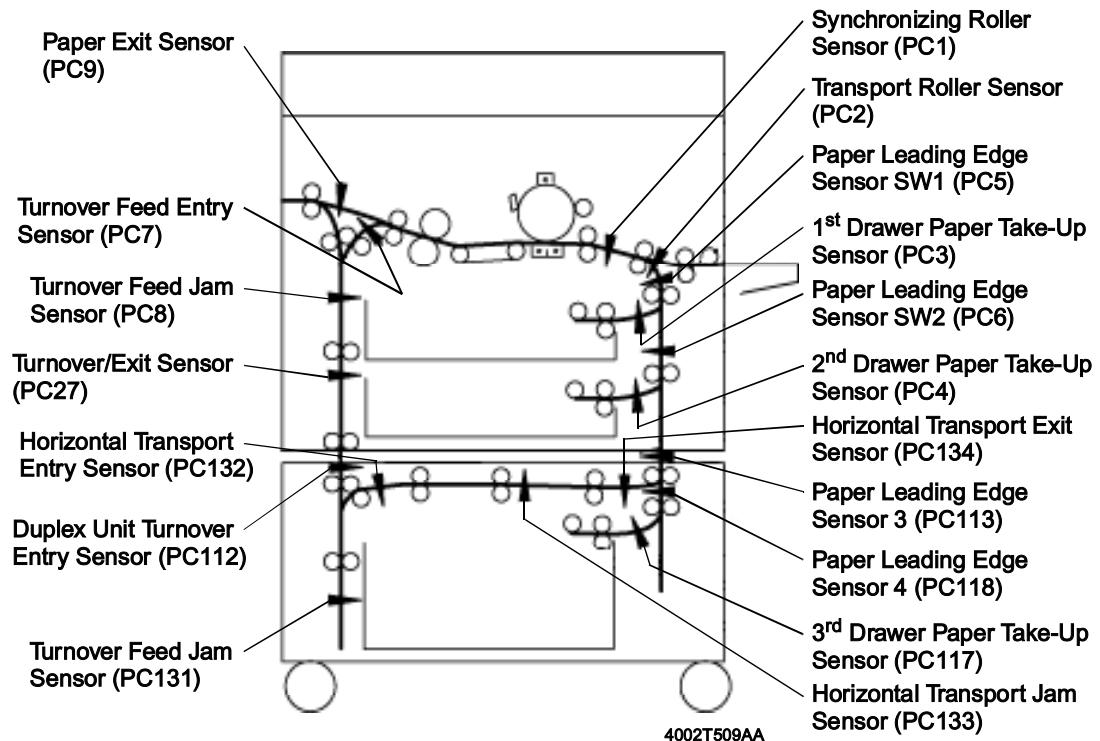
Display	Misfeed/Paper Location	Ref. Page
1	EDH take-up	See the relevant option service manual.
2	EDH reverse, EDH exit	
3	EDH transport	
4	Finisher transport, Finisher exit	
5	Finisher copy set/stack exit	
6	LCT	
7	Copier Fusing Unit	(4)
8	Copier separator	(3)
9	Copier transport	(3)
10	Multi Bypass take-up, take-up vertical transport (upper right section of copier)	(2)
11	Take-up vertical transport (lower right section of copier)	(1)
12	1 <sup>st</sup> Drawer	(1)
13	2 <sup>nd</sup> Drawer	(1)
14	3 <sup>rd</sup> Drawer, LCC	(5) (6)
15	4 <sup>th</sup> Drawer	(5)
16	Duplex horizontal transport	(7)
17	Exit/turnover	(7)
18	Duplex turnover/storage	(7)

#### <Resetting the Display>

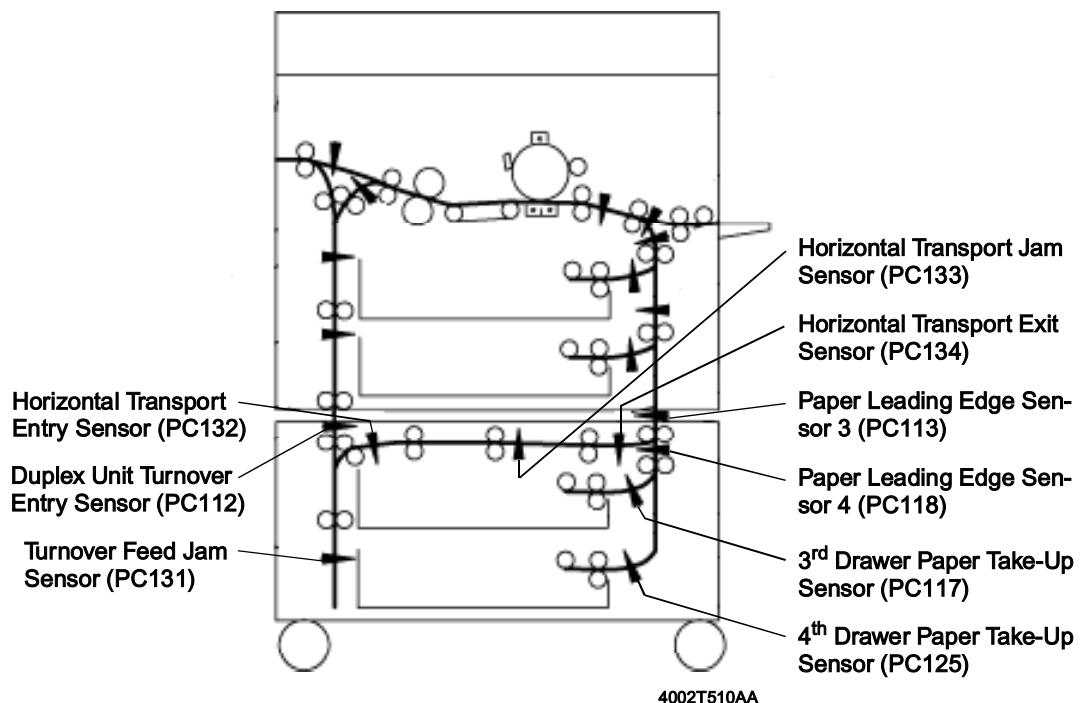
Misfeed in the copier	Open the appropriate door, remove all sheets of paper misfed and left inside, and close the door.
Misfeed in the option	

### 3-2. Misfeed Detection Sensor Layout

- When PF-115 is Mounted



- When PF-208 is Mounted



### 3-3. Types of Misfeed Detection and Detection Timings

- The following lists the types of misfeed detection and detection timings for different misfeed locations.
- The symbol "L" (for the leading edge) and "T" (for the trailing edge) given in ( ) indicate the particular edge of the paper detected by the sensor.

#### **NOTE**

*For the types of misfeed detection and detection timings of options, see the relevant option service manual.*

#### <Copier Paper Take-Up Misfeed>

Type	Detection Start	Detection
Paper take-up failure detection	1 <sup>st</sup> Drawer Paper Take-Up Motor energized	1 <sup>st</sup> Drawer Paper Take-Up Sensor (L)
	2 <sup>nd</sup> Drawer Paper Take-Up Motor energized	2 <sup>nd</sup> Drawer Paper Take-Up Sensor (L)
Paper take-up trailing edge detection	1 <sup>st</sup> Drawer Paper Take-Up Sensor (L)	1 <sup>st</sup> Drawer Paper Take-Up Sensor (T)
	2 <sup>nd</sup> Drawer Paper Take-Up Sensor (L)	2 <sup>nd</sup> Drawer Paper Take-Up Sensor (T)

#### <Multi Bypass Misfeed>

Type	Detection Start	Detection
Bypass paper take-up failure detection	Upper Vertical Transport/ Manual Feed Motor energized	Transport Roller Sensor (L)

#### <Transport/Separator Misfeed>

Type	Detection Start	Detection
Leading edge detection by Synchronizing Roller Sensor	Transport Roller Sensor (L)	Synchronizing Roller Sensor (L)
Leading edge detection by Paper Exit Sensor	Synchronizing Roller Sensor (L)	Paper Exit Sensor (L)
Leading edge detection by Turnover Feed Entry Sensor	Synchronizing Roller Sensor (L)	Turnover Feed Entry Sensor (L)

#### <Fusing/Exit Misfeed>

Type	Detection Start	Detection
Trailing edge detection by Paper Exit Sensor	Synchronizing Roller Sensor (T)	Paper Exit Sensor (T)
Trailing edge detection by Turnover Feed Entry Sensor	Synchronizing Roller Sensor (T)	Turnover Feed Entry Sensor (T)

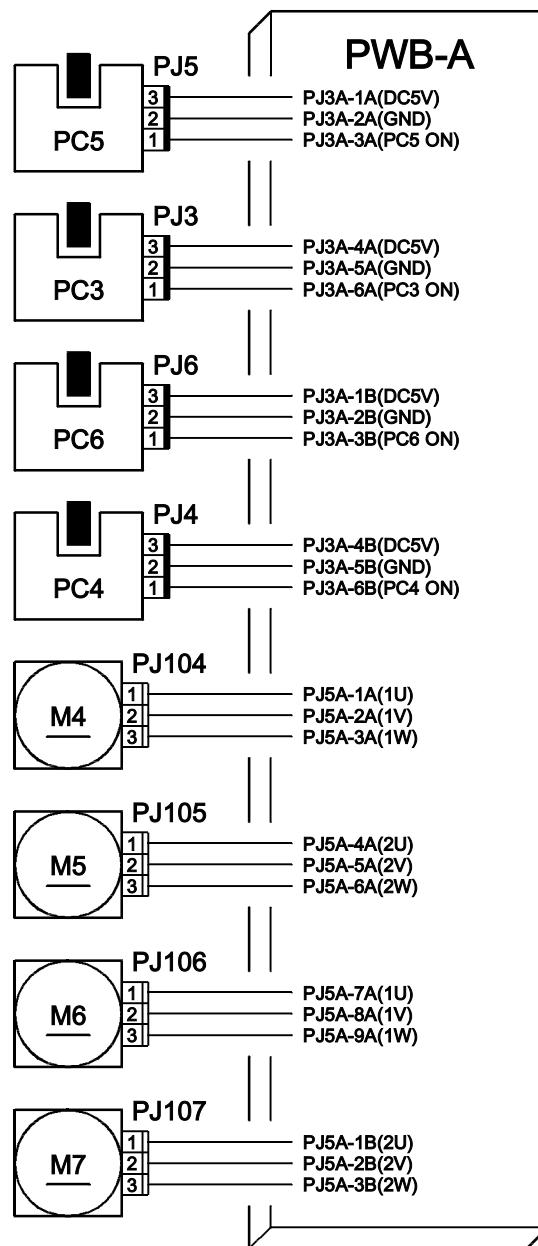
<Duplex Paper Take-Up Misfeed>

Type	Detection Start	Detection
Leading edge detection by Paper Exit Sensor during turnover exit	Turnover Feed Entry Sensor (T)	Paper Exit Sensor (L)
Trailing edge detection by Paper Exit Sensor during turnover exit	Paper Exit Sensor (L)	Paper Exit Sensor (T)
Leading edge detection by Turnover/Exit Sensor	Turnover Feed Entry Sensor (L)	Turnover/Exit Sensor (L)
Leading edge detection by Duplex Unit Turnover Entry Sensor	Turnover/Exit Sensor (L)	Duplex Unit Turnover Entry Sensor (L)
Trailing edge detection by Duplex Unit Turnover Entry Sensor	Turnover/Exit Sensor (T)	Duplex Unit Turnover Entry Sensor (T)
Leading edge detection by Horizontal Transport Entry Sensor	Duplex Unit Turnover Entry Sensor (T)	Horizontal Transport Entry Sensor (L)
Leading edge detection by Horizontal Transport Exit Sensor	Horizontal Transport Entry Sensor (L)	Horizontal Transport Exit Sensor (L)

### 3-4. Misfeed Troubleshooting Procedures

#### (1) Copier Paper Take-Up Misfeed

Relevant Electrical Parts	
1 <sup>st</sup> Drawer Paper Take-Up Sensor (PC3)	1 <sup>st</sup> Drawer Paper Take-Up Motor (M4)
2 <sup>nd</sup> Drawer Paper Take-Up Sensor (PC4)	2 <sup>nd</sup> Drawer Paper Take-Up Motor (M5)
Paper Leading Edge Sensor SW1 (PC5)	Upper Vertical Transport/Manual Feed
Paper Leading Edge Sensor SW2 (PC6)	Motor (M6)
	Lower Vertical Transport Motor (M7)
	Master Board (PWB-A)



4002C01TAA

## Copier Paper Take-Up Misfeed Troubleshooting Procedures

- Paper is not taken up at all.

Step	Check	Result	Action
1	Paper meets product specifications.	NO	Change paper.
2	Paper is curled, wavy, or damp.	YES	Change paper. Instruct user in correct paper storage.
3	Edge Guide and Trailing Edge Stop are at correct position to accommodate paper.	NO	Set.
4	Paper Take-Up Roll is dirty with paper dust, deformed, or worn.	YES	Clean or change.
5	Paper Lifting Plate is dirty or deformed.	YES	Clean or change.
6	Paper Separator Pad is dirty with paper dust, deformed, or worn.	YES	Clean or change.
7	Paper take-up guide plate is dirty or deformed.	YES	Clean or change.
8	1 <sup>st</sup> Drawer Paper Take-Up Motor turns when the Start key is pressed with the 1 <sup>st</sup> Drawer selected.	NO	Correct drive coupling. Change motor or Master Board.
9	2 <sup>nd</sup> Drawer Paper Take-Up Motor turns when the Start key is pressed with the 2 <sup>nd</sup> Drawer selected.	NO	Correct drive coupling. Change motor or Master Board.

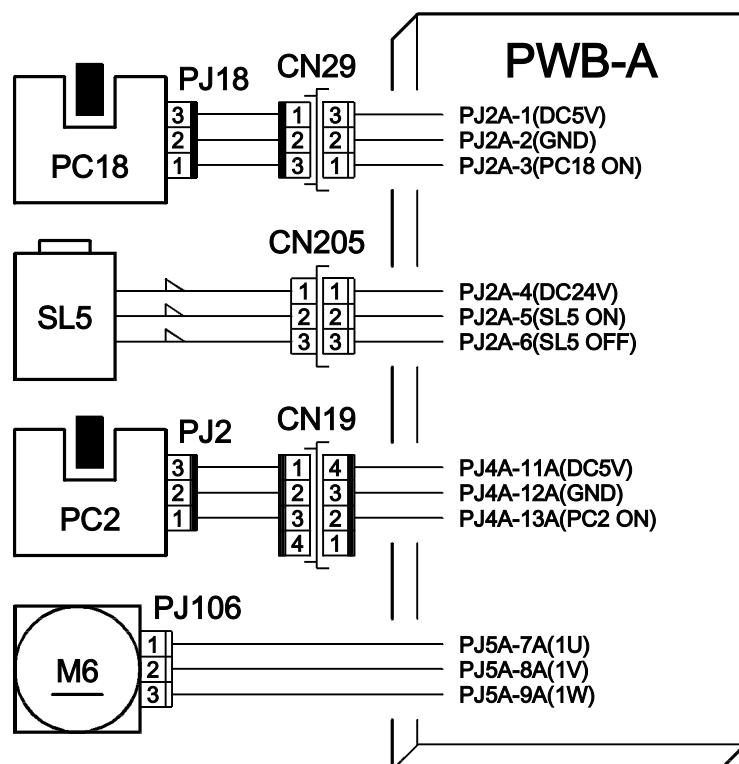


- Paper is at a stop in the Vertical Transport Section.

Step	Check	Result	Action
1	Vertical Transport Rollers are dirty with paper dust, deformed, or worn.	NO	Change paper.
2	Paper take-up guide plate or vertical transport guide plate is dirty or deformed.	YES	Clean or change.
3	I/O check for 1 <sup>st</sup> Drawer Paper Take-Up Sensor operation when the 1 <sup>st</sup> Drawer is used: the voltage across PJ3A-6A on Master Board and GND is DC0V when the sensor is unblocked and DC5V when the sensor is blocked.	YES	Change Master Board.
		NO	Correct actuator. Change sensor.
4	I/O check for 2 <sup>nd</sup> Drawer Paper Take-Up Sensor operation when the 2 <sup>nd</sup> Drawer is used: the voltage across PJ3A-6B on Master Board and GND is DC0V when the sensor is unblocked and DC5V when the sensor is blocked.	YES	Change Master Board.
		NO	Correct actuator. Change sensor.
5	I/O check for Paper Leading Edge Sensor SW1 operation when the 1 <sup>st</sup> Drawer is used: the voltage across PJ3A-3A on Master Board and GND is DC0V when the sensor is unblocked and DC5V when the sensor is blocked.	YES	Change Master Board.
		NO	Correct actuator. Change sensor.
6	I/O check for Paper Leading Edge Sensor SW2 operation when the 2 <sup>nd</sup> Drawer is used: the voltage across PJ3A-3B on Master Board and GND is DC0V when the sensor is unblocked and DC5V when the sensor is blocked.	YES	Change Master Board.
		NO	Correct actuator. Change sensor.
7	Upper Vertical Transport/Manual Feed Motor turns when the Start key is pressed with the 1 <sup>st</sup> Drawer selected.	NO	Correct drive coupling. Change motor or Master Board.
8	Lower Vertical Transport Motor turns when the Start key is pressed with the 2 <sup>nd</sup> Drawer selected.	NO	Correct drive coupling. Change motor or Master Board.

**(2) Multi Bypass Misfeed**

Relevant Electrical Parts	
Transport Roller Sensor (PC2) Manual Feed Paper Empty Sensor (PC18) Upper Vertical Transport/Manual Feed Motor (M6)	Manual Feed Paper Pick-Up Solenoid (SL5) Master Board (PWB-A)



4002C02TAA

## Multi Bypass Misfeed Troubleshooting Procedures

- Paper is not detected.

Step	Check	Result	Action
1	I/O check for Manual Feed Paper Empty Sensor operation: the voltage across PJ2A-3 on Master Board and GND is DC0V when the sensor is unblocked and DC5V when the sensor is blocked.	YES	Change Master Board.
		NO	Correct actuator. Change sensor.

- Paper is not taken up at all.

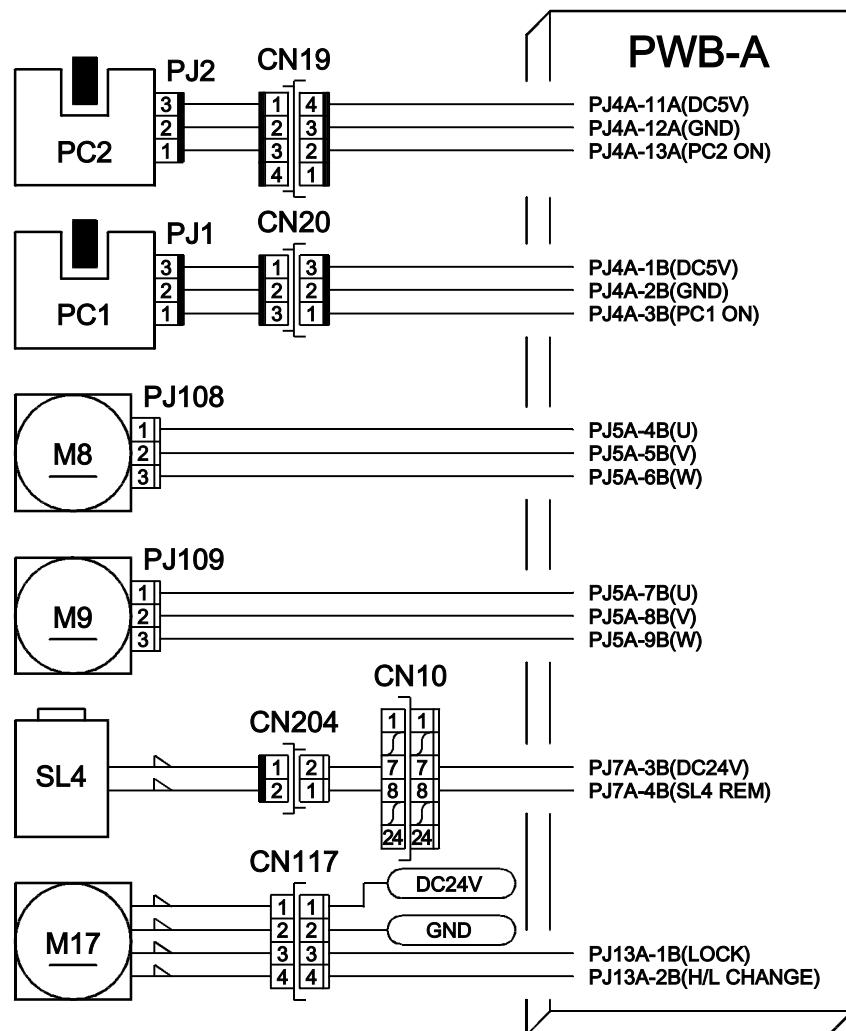
Step	Check	Result	Action
1	Paper meets product specifications.	NO	Change paper.
2	Paper is curled, wavy, or damp.	YES	Change paper. Instruct user in correct paper storage.
3	Friction Pad and guide plate are dirty with paper dust, deformed, or worn.	YES	Clean or change.
4	Manual Bypass Take-Up Roll is dirty with paper dust, deformed, or worn.	YES	Clean or change.
5	Upper Vertical Transport/Manual Feed Motor turns when the Start key is pressed with the Multi Bypass Tray selected.	NO	Correct drive coupling. Change motor or Master Board.

- Paper is at a stop at the Transport Rollers.

Step	Check	Result	Action
1	Manual Feed Paper Pick-Up Solenoid operation when the Start key is pressed with paper loaded in the Multi Bypass Tray: the voltage across PJ2A-6 on Master Board and GND is DC24V when the solenoid is deenergized and DC0V when the solenoid is energized.	YES	Change solenoid.
		NO	Change Master Board.
2	Transport Rollers are dirty with paper dust, deformed, or worn.	YES	Clean or change.
3	I/O check for Transport Roller Sensor operation: the voltage across PJ4A-13A on Master Board and GND is DC0V when the sensor is unblocked and DC5V when the sensor is blocked.	YES	Change Master Board.
		NO	Correct actuator. Change sensor.

**(3) Transport/Separator Misfeed**

Relevant Electrical Parts	
Transport Roller Sensor (PC2)	Suction Fan Motor (M17)
Synchronizing Roller Sensor (PC1)	Separator Finger Solenoid (SL4)
Transport Roller Motor (M8)	Master Board (PWB-A)
Synchronizing Roller Motor (M9)	



4002C03TAA

## Transport/Separator Misfeed Troubleshooting Procedures

- Paper is at a stop at the Synchronizing Rollers.

Step	Check	Result	Action
1	Synchronizing Rollers are dirty with paper dust, deformed, or worn.	YES	Clean or change.
2	The length of the loop formed before the Synchronizing Rollers is okay.	NO	Adjust loop length.
3	I/O check for Synchronizing Roller Sensor operation: the voltage across PJ4A-3B on Master Board and GND is DC0V when the sensor is unblocked and DC5V when the sensor is blocked.	YES	Change Master Board.
		NO	Correct actuator. Change sensor.
4	Synchronizing Roller Motor turns when the Start key is pressed.	NO	Correct drive coupling. Change motor or Master Board.

- Paper is at a stop near the PC Drum.

Step	Check	Result	Action
1	Image Transfer Entrance Guide Plate is dirty with paper dust, deformed, or worn.	YES	Clean or change.
2	Image Transfer/Paper Separator Corona wires are dirty or deteriorated.	YES	Clean or change.
3	Paper guide above Paper Separator Corona is dirty or deformed.	YES	Clean or change.

- Paper is at a stop near the PC Drum Paper Separator Finger.

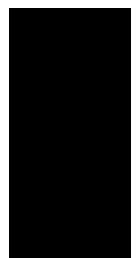
Step	Check	Result	Action
1	PC Drum Paper Separator Fingers are dirty or deformed.	YES	Clean or change.
2	Separator Finger Solenoid operation: the voltage across PJ7A-4B on Master Board and GND is DC24V when the solenoid is deenergized and DC0V when the solenoid is energized.	YES	Change solenoid.
		NO	Change Master Board.

- Paper is at a stop on the Suction Belts.

Step	Check	Result	Action
1	Suction Belts turn correctly.	NO	Correct drive coupling.
2	Suction Fan Motor rotation when the Start key is pressed: the voltage across PJ13A-2B on Master Board and GND is DC0V when the motor is deenergized and DC5V when the motor is energized.	YES	Change Suction Belts or motor.
		NO	Change Master Board.

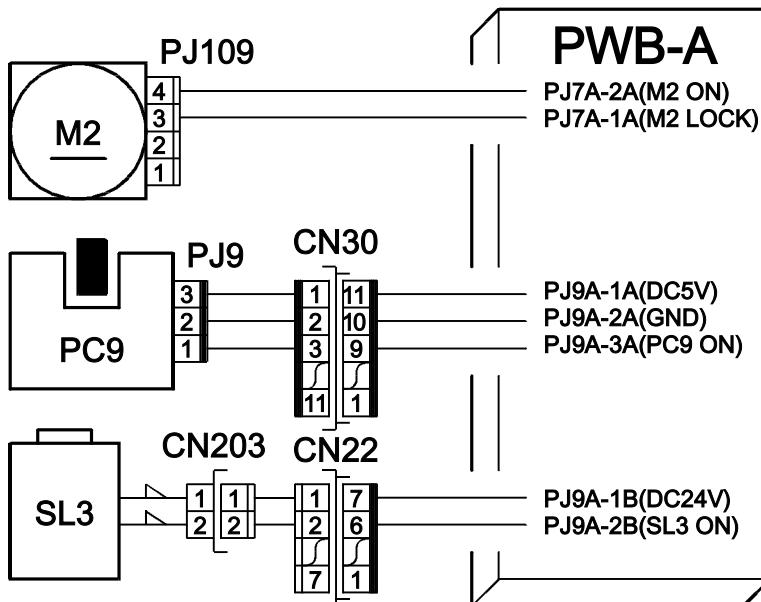
- Paper is at a stop at the Transport Rollers.

Step	Check	Result	Action
1	Transport Rollers are dirty with paper dust, deformed, or worn.	YES	Clean or change.
2	Transport Roller Motor turns when the Start key is pressed.	NO	Correct drive coupling. Change motor or Master Board.



#### (4) Fusing/Exit Misfeed

Relevant Electrical Parts	
Paper Exit Sensor (PC9) Fusing Motor (M2)	Exit/Duplex Switching Solenoid (SL3) Master Board (PWB-A)



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#### Fusing/Exit Misfeed Troubleshooting Procedures

- Paper is at a stop at the Fusing Unit.

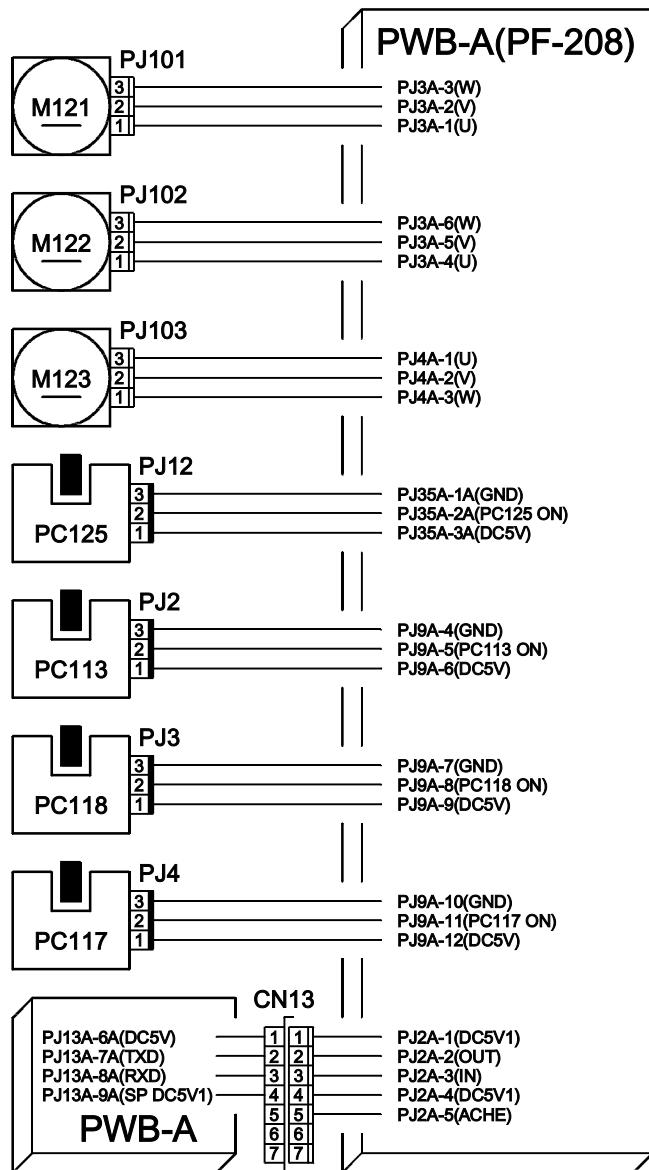
Step	Check	Result	Action
1	Fusing Guide Plate is dirty or deformed.	YES	Clean or change.
2	Fusing Rollers are dirty or scratched.	YES	Clean or change.
3	Fusing Roller Paper Separator Fingers are dirty, deformed, or worn.	YES	Clean, correct, or change.
4	Fusing Motor turns when the Start key is pressed.	NO	Correct drive coupling. Change motor or Master Board.

- Paper is at a stop at the exit section.

Step	Check	Result	Action
1	Exit Roller is dirty or scratched.	YES	Clean or change.
2	I/O check for Paper Exit Sensor: the voltage across PJ9A-3A on Master Board and GND is DC0V when the sensor is unblocked and DC5V when the sensor is blocked.	YES NO	Change Master Board.
			Correct actuator. Change sensor.
3	Fusing Motor turns when the Start key is pressed.	NO	Correct drive coupling. Change motor or Master Board.

**(5) PF-208 Paper Take-Up Misfeed**

Relevant Electrical Parts	
3 <sup>rd</sup> Drawer Paper Take-Up Sensor (PC117)	3 <sup>rd</sup> Drawer Paper Take-Up Motor (M122)
4 <sup>th</sup> Drawer Paper Take-Up Sensor (PC125)	4 <sup>th</sup> Drawer Paper Take-Up Motor (M123)
Paper Leading Edge Sensor 3 (PC113)	Vertical Transport Motor (M121)
Paper Leading Edge Sensor 4 (PC118)	Control Board (PWB-A): PF-208
	Master Board (PWB-A)



4002C05TAA

## PF-208 Paper Take-Up Misfeed Troubleshooting Procedures

- Paper is not taken up at all.

Step	Check	Result	Action
1	Paper meets product specifications.	NO	Change paper.
2	Paper is curled, wavy, or damp.	YES	Change paper. Instruct user in correct paper storage.
3	Edge Guide and Trailing Edge Stop are at correct position to accommodate paper.	NO	Set.
4	Paper Lifting Plate is dirty or deformed.	YES	Clean or change.
5	Paper Separator Pad is dirty with paper dust, deformed, or worn.	YES	Clean or change.
6	Paper take-up guide plate is dirty or deformed.	YES	Clean or change.
7	Paper Take-Up Roll and Separator Roll are dirty with paper dust, deformed, or worn.	YES	Clean or change.
8	3 <sup>rd</sup> Drawer Paper Take-Up Motor turns when the Start key is pressed with the 3 <sup>rd</sup> Drawer selected.	NO	Correct drive coupling. Change motor or Control Board. Change Master Board.
9	4 <sup>th</sup> Drawer Paper Take-Up Motor turns when the Start key is pressed with the 4 <sup>th</sup> Drawer selected.	NO	Correct drive coupling. Change motor or Control Board. Change Master Board.

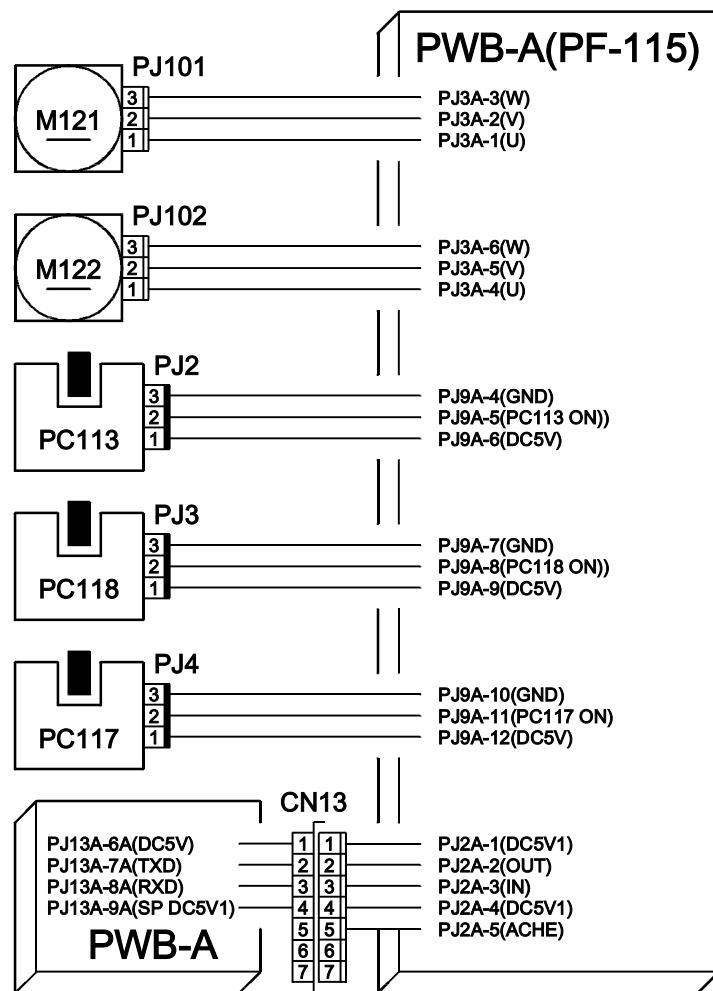
- Paper is at a stop at the Vertical Transport Rollers.

Step	Check	Result	Action
1	Vertical Transport Rollers are dirty with paper dust, deformed, or worn.	YES	Clean or change.
2	Paper take-up guide plate or vertical transport guide plate is dirty or deformed.	YES	Clean, correct, or change.
3	Vertical Transport Motor turns when the Start key is pressed with the cabinet selected.	NO	Correct drive coupling. Change motor or Control Board. Change Master Board.
4	I/O check for 3 <sup>rd</sup> Drawer Paper Take-Up Sensor operation when the 3 <sup>rd</sup> Drawer is used: the voltage across PJ9A-11 on Control Board and GND is DC5V when the sensor is unblocked and DC0V when the sensor is blocked.	YES	Change Control Board or Master Board.
		NO	Correct actuator. Change sensor.
5	I/O check for 4 <sup>th</sup> Drawer Paper Take-Up Sensor operation when the 4 <sup>th</sup> Drawer is used: the voltage across PJ5A-2A on Control Board and GND is DC5V when the sensor is unblocked and DC0V when the sensor is blocked.	YES	Change Control Board or Master Board.
		NO	Correct actuator. Change sensor.
6	I/O check for Paper Leading Edge Sensor 3 operation when the 3 <sup>rd</sup> Drawer is used: the voltage across PJ9A-5 on Control Board and GND is DC5V when the sensor is unblocked and DC0V when the sensor is blocked.	YES	Change Control Board or Master Board.
		NO	Correct actuator. Change sensor.
7	I/O check for Paper Leading Edge Sensor 4 operation when the 4 <sup>th</sup> Drawer is used: the voltage across PJ9A-8 on Control Board and GND is DC5V when the sensor is unblocked and DC0V when the sensor is blocked.	YES	Change Control Board or Master Board.
		NO	Correct actuator. Change sensor.



**(6) PF-115 Paper Take-Up Misfeed**

Relevant Electrical Parts	
3 <sup>rd</sup> Drawer Paper Take-Up Sensor (PC117) Paper Leading Edge Sensor 3 (PC113) Paper Leading Edge Sensor 4 (PC118)	3 <sup>rd</sup> Drawer Paper Take-Up Motor (M122) Vertical Transport Motor (M121) Control Board (PWB-A): PF-115 Master Board (PWB-A)



4002C06TAA

## PF-115 Paper Take-Up Misfeed Troubleshooting Procedures

- Paper is not taken up at all.

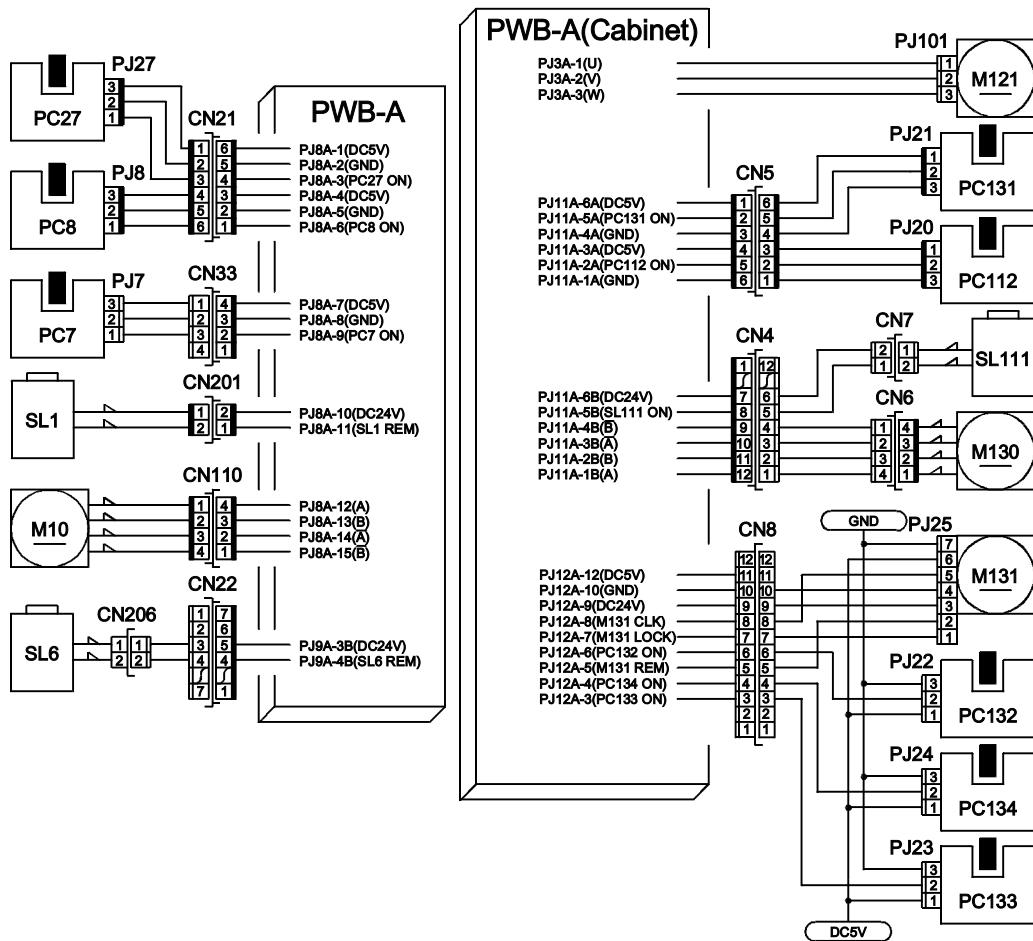
Step	Check	Result	Action
1	Paper meets product specifications.	NO	Change paper.
2	Paper is curled, wavy, or damp.	YES	Change paper. Instruct user in correct paper storage.
3	Paper Lifting Plate is dirty or deformed.	YES	Clean or change.
4	Paper Separator Pad is dirty with paper dust, deformed, or worn.	YES	Clean or change.
5	Paper take-up guide plate is dirty or deformed.	YES	Clean or change.
6	Paper Take-Up Roll and Separator Roll are dirty with paper dust, deformed, or worn.	YES	Clean or change.
7	3 <sup>rd</sup> Drawer Paper Take-Up Motor turns when the Start key is pressed with the 3 <sup>rd</sup> Drawer selected.	NO	Correct drive coupling. Change motor or Control Board. Change Master Board.

- Paper is at a stop at the Vertical Transport Rollers.

Step	Check	Result	Action
1	Vertical Transport Rollers are dirty with paper dust, deformed, or worn.	YES	Clean or change.
2	Paper take-up guide plate or vertical transport guide plate is dirty or deformed.	YES	Clean, correct, or change.
3	Vertical Transport Motor turns when the Start key is pressed with the cabinet selected.	NO	Correct drive coupling. Change motor or Control Board. Change Master Board.
4	I/O check for 3 <sup>rd</sup> Drawer Paper Take-Up Sensor operation when the 3 <sup>rd</sup> Drawer is used: the voltage across PJ9A-11 on Control Board and GND is DC5V when the sensor is unblocked and DC0V when the sensor is blocked.	YES	Change Control Board or Master Board.
		NO	Correct actuator. Change sensor.
5	I/O check for Paper Leading Edge Sensor 3 operation when the 3 <sup>rd</sup> Drawer is used: the voltage across PJ9A-5 on Control Board and GND is DC5V when the sensor is unblocked and DC0V when the sensor is blocked.	YES	Change Control Board or Master Board.
		NO	Correct actuator. Change sensor.

## (7) Duplex Paper Take-Up Misfeed

Relevant Electrical Parts	
Turnover Feed Entry Sensor (PC7)	Turnover Motor (M10)
Turnover Feed Jam Sensor (PC8)	Vertical Transport Motor (M121)
Turnover/Exit Sensor (PC27)	Duplex Unit Turnover Motor (M130)
Duplex Unit Turnover Entry Sensor (PC112)	Horizontal Transport Motor (M131)
Turnover Feed Jam Sensor (PC131)	Turnover Roller Retraction Solenoid (SL1)
Horizontal Transport Entry Sensor (PC132)	Turnover Route Switching Solenoid (SL6)
Horizontal Transport Jam Sensor (PC133)	Turnover Roller Interval Solenoid (SL111)
Horizontal Transport Exit Sensor (PC134)	Control Board (PWB-A): Cabinet Master Board (PWB-A)



4002C07TAA

## Duplex Paper Take-Up Misfeed Troubleshooting Procedures

- Paper is at a stop at the turnover section.

Step	Check	Result	Action
1	Rollers at the turnover section are dirty, deformed, or worn.	YES	Clean or change.
2	Guide plate at the turnover section is dirty or deformed.	YES	Clean, correct, or change.
3	A torn piece of paper is left at the turnover section.	YES	Clean.
4	I/O check for Turnover Feed Entry Sensor operation: the voltage across PJ8A-9 on Master Board and GND is DC0V when the sensor is unblocked and DC5V when the sensor is blocked.	YES	Change Master Board.
		NO	Correct actuator. Change sensor.
5	I/O check for Turnover Feed Jam Sensor operation: the voltage across PJ8A-6 on Master Board and GND is DC0V when the sensor is unblocked and DC5V when the sensor is blocked.	YES	Change Master Board.
		NO	Correct actuator. Change sensor.
6	I/O check for Turnover/Exit Sensor operation: the voltage across PJ8A-3 on Master Board and GND is DC0V when the sensor is unblocked and DC5V when the sensor is blocked.	YES	Change Master Board.
		NO	Correct actuator. Change sensor.
7	Horizontal Transport Motor rotation: the voltage across PJ12A-5 on Control Board and GND is DC0V when the motor is deenergized and DC5V when the motor is energized.	YES	Change motor.
		NO	Change Control Board.
8	Turnover Motor rotation	NO	Correct drive coupling. Change motor or Master Board.

- Paper is at a stop at the horizontal transport section.

Step	Check	Result	Action
1	Horizontal Transport Rollers are dirty with paper dust, deformed, or worn.	YES	Clean or change.
2	Horizontal transport guide plate is dirty or deformed.	YES	Clean, correct, or change.
3	I/O check for Horizontal Transport Entry Sensor operation: the voltage across PJ12A-6 on Control Board and GND is DC5V when the sensor is unblocked and DC0V when the sensor is blocked.	YES	Change Control Board.
		NO	Correct actuator. Change sensor.
4	I/O check for Horizontal Transport Jam Sensor operation: the voltage across PJ12A-3 on Control Board and GND is DC5V when the sensor is unblocked and DC0V when the sensor is blocked.	YES	Change Control Board or Master Board.
		NO	Correct actuator. Change sensor.
5	I/O check for Horizontal Transport Exit Sensor operation: the voltage across PJ12A-4 on Control Board and GND is DC5V when the sensor is unblocked and DC0V when the sensor is blocked.	YES	Change Control Board or Master Board.
		NO	Correct actuator. Change sensor.
6	Vertical Transport Motor turns when the Start key is pressed with the cabinet selected.	NO	Correct drive coupling. Change motor or Control Board. Change Master Board.

## 4. MALFUNCTIONS

The copier's CPU is equipped with a self-diagnostics function that, on detecting a malfunction, gives the corresponding malfunction code on the Touch Panel.

### ***Resetting a Malfunction***

- Press the Trouble Reset Switch on the Tech. Rep. Setting Switches Board to reset fusing- and Exposure Lamp-related malfunctions.
- For any other malfunctions, open and close the Front Door or turn OFF and ON the Power Switch.

### **4-1. Detection Timing by Malfunction Code**

Code	Description	Detection Timing
C0000	Fusing Motor's failure to turn	<ul style="list-style-type: none"><li>• The Lock signal remains HIGH for a continuous period of 1.5 sec. or more after the lapse of 10 sec. after the motor has started turning.</li><li>• The Lock signal remains LOW for a continuous period of 1.5 sec. or more after the lapse of 10 sec. after the motor has stopped turning.</li></ul>
C0010	PC Drum Drive Motor's failure to turn	<ul style="list-style-type: none"><li>• The Lock signal remains HIGH for a continuous period of 1.5 sec. or more after the lapse of 10 sec. after the motor has started turning.</li><li>• The Lock signal remains LOW for a continuous period of 1.5 sec. or more after the lapse of 10 sec. after the motor has stopped turning.</li></ul>
C0040	Suction Fan Motor's failure to turn	The Lock signal remains HIGH for a continuous period of 1.5 sec. or more after the lapse of 10 sec. after the motor has started turning at high speed.
C0042	Fusing Unit Cooling Fan Motor's failure to turn	The Lock signal remains HIGH for a continuous period of 1.5 sec. or more after the lapse of 10 sec. after the motor has started turning at high speed.
C0044	EDH Fan Motor malfunction	See the relevant option service manual.
C0045	IR Cooling Fan Motor malfunction	The Lock signal remains HIGH for a continuous period of 1.5 sec. or more after the lapse of 10 sec. after the motor has stopped turning.
C0046	PH Cooling Fan Motor 1 malfunction	The Lock signal remains HIGH for a continuous period of 1.5 sec. or more after the lapse of 10 sec. after the motor has started turning.
C0047	PH Cooling Fan Motor 2 malfunction	The Lock signal remains HIGH for a continuous period of 1.5 sec. or more after the lapse of 10 sec. after the motor has started turning.
C0049	Paper source option Vertical Transport Cooling Fan Motor malfunction	See the relevant option service manual.



Code	Description	Detection Timing
C004C	Ventilation Fan Motor's failure to turn	<ul style="list-style-type: none"> <li>The Lock signal remains HIGH for a continuous period of 1.5 sec. or more after the lapse of 10 sec. after the motor has started turning.</li> <li>The Lock signal remains LOW for a continuous period of 1.5 sec. or more after the lapse of 10 sec. after the motor has stopped turning.</li> </ul>
C004E	Power Supply Unit Cooling Fan Motor 1's failure to turn	The Lock signal remains HIGH for a continuous period of 1.5 sec. or more after the lapse of 10 sec. after the motor has started turning at high speed.
C004F	Power Supply Unit Cooling Fan Motor 2's failure to turn	The Lock signal remains HIGH for a continuous period of 1.5 sec. or more after the lapse of 10 sec. after the motor has started turning at high speed.
C0072	Main Hopper Toner Replenishing Motor's failure to turn	<ul style="list-style-type: none"> <li>The Toner Bottle Home Position Sensor does not go HIGH within 5 sec. after the motor has started turning.</li> <li>The Toner Bottle Home Position Sensor does not go LOW within 10 sec. after the motor has started turning and the sensor has gone HIGH.</li> <li>The motor is stationary or the Toner Bottle Home Position Sensor is HIGH 2 sec. after the motor has stopped turning.</li> </ul>
C0090	Developing Unit Drive Motor's failure to turn	<ul style="list-style-type: none"> <li>The Lock signal remains HIGH for a continuous period of 1.5 sec. or more after the lapse of 10 sec. after the motor has started turning.</li> <li>The Lock signal remains LOW for a continuous period of 1.5 sec. or more after the lapse of 10 sec. after the motor has stopped turning.</li> </ul>
C0210	Image Transfer/Paper Separator Corona charge leak detected	The Charge Leak Detection signal (SCD) remains ON for a continuous period of 0.3 sec. after the Image Transfer/Paper Separator Corona output has been turned ON.
C0400	Exposure Lamp's failure to turn ON	<ul style="list-style-type: none"> <li>During a light intensity adjustment sequence, the CCD read data does not exceed the specified level when the peak of the intensity of light is detected within 1 min. after the Exposure Lamp has turned ON.</li> <li>Under normal conditions, the CCD read data does not exceed the specified level 450 ms after the Exposure Lamp has turned ON.</li> </ul>
C0420	Exposure Lamp turning ON at abnormal timing	During a light intensity adjustment sequence, the adjusted value for the intensity of light remains at the lower limit and the CCD output level is at the saturation level even after the lapse of 2 sec. after the Exposure Lamp has turned ON.

Code	Description	Detection Timing
C0500	Warming-up failure	<p>The surface temperature of the Upper Fusing Roller does not reach a specified level even after the lapse of a predetermined period of time during warming-up as detailed below:</p> <ul style="list-style-type: none"> <li>• From room temperature to 90°C: Within 180 sec.</li> <li>• . From 90°C to 140°C: Within 140 sec.</li> <li>• . From 140°C to 170°C: Within 135 sec.</li> </ul> <p>The copier fails to complete its warm-up cycle within 135 sec. after the temperature has reached 170°C.</p>
C0510	Abnormally low Upper Fusing Roller temperature	<ul style="list-style-type: none"> <li>• The surface temperature of the Upper Fusing Roller remains less than 120°C for a continuous period of 2 sec. or more after the copier has completed warming up.</li> </ul>
C0520	Abnormally high fusing temperature	<ul style="list-style-type: none"> <li>• The surface temperature of the Upper Fusing Roller remains 215°C or more for a continuous period of 2 sec. or more after the copier has completed warming up.</li> <li>• The surface temperature of the Lower Fusing Roller remains 200°C or more for a continuous period of 2 sec. or more after the copier has completed warming up.</li> </ul>
C0540	Abnormally low Lower Fusing Roller temperature	<ul style="list-style-type: none"> <li>• The surface temperature of the Lower Fusing Roller remains 50°C or less for a continuous period of 2 sec. or more after the copier has completed warming up.</li> </ul>
C0602	Cable unwound	A Scanner drive command is issued when the Scanner is at its home position and the Scanner Reference Position Sensor remains blocked even after the lapse of a given period of time (after the Scanner has been driven to move a given distance thereafter).
C0650	SHOME signal error	A Scanner drive command is issued when the Scanner is at a position other than its home and the Scanner Reference Position Sensor is not blocked even after the lapse of a given period of time (after the Scanner has been driven to move a given distance thereafter).
C0900	3 <sup>rd</sup> Drawer Paper Lift-Up Sensor malfunction	
C0904	3 <sup>rd</sup> Drawer Paper Lift-Up Motor's failure to turn	See the relevant option service manual.

Code	Description	Detection Timing
C0910	2 <sup>nd</sup> Drawer Paper Lift-Up Sensor malfunction	<ul style="list-style-type: none"> <li>The 2<sup>nd</sup> Drawer Paper Lift-Up Sensor is not blocked (LOW) even after the lapse of 5 sec. after the 2<sup>nd</sup> Drawer Paper Lift-Up Motor has started turning.</li> <li>The 2<sup>nd</sup> Drawer Paper Lift-Up Sensor is not activated even when the 2<sup>nd</sup> Drawer Paper Lift-Up Motor Pulse Sensor detects 150 edges of rotation detection pulses after the 2<sup>nd</sup> Drawer Paper Lift-Up Motor has started turning.</li> </ul>
C0914	2 <sup>nd</sup> Drawer Lift-Up Motor's failure to turn	The 2 <sup>nd</sup> Drawer Paper Lift-Up Motor Pulse Sensor detects no edges of rotation detection pulses even after the lapse of 500 ms after the 2 <sup>nd</sup> Drawer Paper Lift-Up Motor has started turning.
C0920	1 <sup>st</sup> Drawer Paper Lift-Up Sensor malfunction	<ul style="list-style-type: none"> <li>The 1<sup>st</sup> Drawer Paper Lift-Up Sensor is not blocked (LOW) even after the lapse of 5 sec. after the 1<sup>st</sup> Drawer Paper Lift-Up Motor has started turning.</li> <li>The 1<sup>st</sup> Drawer Paper Lift-Up Sensor is not activated even when the 1<sup>st</sup> Drawer Paper Lift-Up Motor Pulse Sensor detects 150 edges of rotation detection pulses after the 1<sup>st</sup> Drawer Paper Lift-Up Motor has started turning.</li> </ul>
C0924	1 <sup>st</sup> Drawer Lift-Up Motor's failure to turn	The 1 <sup>st</sup> Drawer Paper Lift-Up Motor Pulse Sensor detects no edges of rotation detection pulses even after the lapse of 500 ms after the 1 <sup>st</sup> Drawer Paper Lift-Up Motor has started turning.
C0950	4 <sup>th</sup> Drawer Paper Lift-Up Sensor malfunction	See the relevant option service manual.
C0954	4 <sup>th</sup> Drawer Paper Lift-Up Motor's failure to turn	
C0990	Main Tray lifting motion failure	
C0994	Main Tray Elevator Motor's failure to turn	
C0996	Main Tray lock release failure	
C0997	Shift Gate malfunction	
C0998	Shifter return failure	
C099C	Shift Motor's failure to turn	
C09C0	LCT Elevator ascent/descent failure	

Code	Description	Detection Timing
C0B00		
C0B02	Transport mechanism malfunction	
C0B03		
C0B04		
C0B20		
C0B21	Stapling Unit drive system malfunction	
C0B24		
C0B30		
C0B31		
C0B34	Paper Aligning Mechanism malfunction	
C0B35		
C0B36		
C0B38		
C0B48	Neat copy stack transport mechanism malfunction	
C0B49		See the relevant option service manual.
C0B4A		
C0B4B	Copy stack transport mechanism malfunction	
C0B4D		
C0B4E		
C0B4F		
C0B50		See the relevant option service manual.
C0B51	Stapling drive system	
C0B54		
C0B73	Hole Punch mechanism malfunction	See the relevant option service manual.
C0B74		
C0B78	Hole Punch mechanism malfunction	
C0B80	Shifting mechanism malfunction	See the relevant option service manual.
C0BA0		
C0BA1	Elevator mechanism malfunction	
C0BA2		



Code	Description	Detection Timing
C0BC0	Paper folding mechanism malfunction	See the relevant option service manual.
C0BC1		
C0BC2		
C0BC3		
C0BF0	Control system malfunction	
C0D50	Duplex Horizontal Transport Motor malfunction	
C0E00	Main Erase Lamp's failure to turn ON	<ul style="list-style-type: none"> <li>The Main Erase Lamp Malfunction signal remains LOW for a continuous 1-sec. period while the Main Erase Lamp remains OFF.</li> <li>The Main Erase Lamp Malfunction signal remains HIGH for a continuous 1-sec. period while the Main Erase Lamp remains ON.</li> </ul>
C0F24	AIDC Sensor contamination correction failure	The output voltage from the AIDC Sensor Board does not fall within the range of 0.9V to 1.1V even after the contamination correction and variation adjustment have been made.
C0F32	ATDC Sensor malfunction	<ul style="list-style-type: none"> <li>The output voltage from the ATDC Sensor remains 0.2V or less, or 4.5V or more, for a continuous 3-sec. period after the Developing Unit Drive Motor has been energized.</li> <li>The output voltage from the ATDC Sensor does not fall within the range of 2.45V to 2.55V during an F8 operation.</li> </ul>
C10XX	Memory Board failure	
C11XX	(An trouble code (C1038) appears on the Touch Panel while data is being rewritten. It does not, however, indicate any problematic symptom and can be ignored.)	
C12XX	C12CX Hard Disk Drive failure	
C1300	Polygon Motor malfunction	<ul style="list-style-type: none"> <li>No Lock signals are detected for the period of 5 to 20 sec. after the motor has started turning after the Power Switch was turned ON.</li> <li>No Lock signals are detected for the period of 5 to 20 sec. after the motor has started turning at full speed after the Start key was pressed.</li> <li>The Lock signal remains HIGH for a continuous period of 3 sec. or more while the motor is running at steady speed.</li> </ul>
C1326	ARMS interface failure	No answer is received within 1.5 sec. to a report transmitted by the engine.
C1330	VD signal error	A LOW VD signal is not detected even after the lapse of 60 sec. after an IDREQ signal has been output.

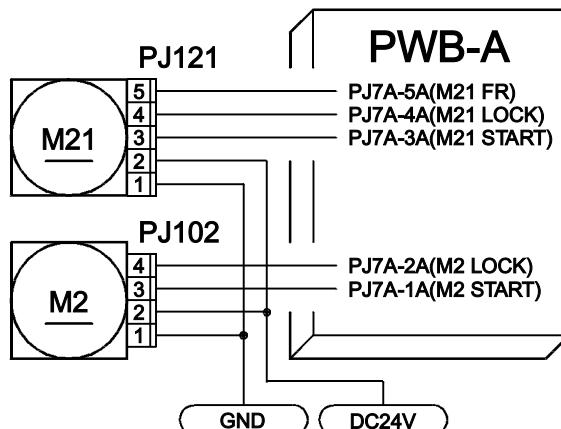
Code	Description	Detection Timing
C1334	Duplex take-up print command error	<ul style="list-style-type: none"> <li>A Duplex take-up print command is not received for the paper to be taken up from the Duplex after the paper has moved past the horizontal transport, but before it reaches the Transport Roller.</li> <li>The number of Duplex take-up print commands falls short of the number of sheets of paper to be taken up from the Duplex, or the leading edge of a sheet of paper, for which a Duplex take-up print command is yet to be received, activates the Transport Roller Sensor.</li> </ul>
C133B	Option I/F communications error	
C13F1	600dpi SOS Sensor failure	
C13F4	Optical System out of adjustment range	
C13F5	LD1 intensity adjustment failure	
C13F6	LD2 intensity adjustment failure	
C13F7	Sub-scanning direction beam position adjustment failure	
C13F8	Main scanning direction beam position adjustment failure	
C13F9	EEPROM communications error	
C13FA	LD2 out of correction range	
C13FC	APC failure	
C1401	IR main routine timeout	
C1402	IR illegal interrupt vector occurred	
C1410	IR watchdog	
C1426	Report retransmitted	
C1428	Transmission buffer full	
C1429	Reception buffer full	
C142A	Transmission hard error	
C1430	H-Sync error	
C143E	EDH malfunction	
C1440	Gain adjustment failure	
C1441	CCD failure (clamp adjustment failure)	
C1450	Sequence trouble timeout	
C1461	Serial GA1 failure	
C1462	Serial GA2 failure	
C1470	Module-to-module communication (CCM-EVM)	
C1471	Module-to-module communication (EVM-SQM)	
C1472	Module-to-module communication (EVM-AMM)	
C1499	IR cooling fan malfunction	
C18XX	SCSI communications unit failure	



## 4-2. Troubleshooting Procedures by Malfunction Code

- (1) C0000: Fusing Motor's failure to turn  
 C0010: PC Drum Drive Motor's failure to turn

Relevant Electrical Parts	
Fusing Motor (M2) PC Drum Drive Motor (M21)	Master Board (PWB-A)



4002C08TAA

### C0000

Step	Check	Result	Action
1	Fusing Motor turns when the Start key is pressed.	NO	Correct drive coupling.
2	Fusing Motor rotation: the voltage across PJ7A-1A on Master Board and GND is DC5V (motor deenergized) and DC0V (motor energized) when the Start key is pressed.	NO	Change Master Board.
3	Fusing Motor rotation: the voltage across PJ7A-2A on Master Board and GND is DC5V (motor deenergized) and DC0V (motor energized) when the Start key is pressed.	YES	Change Master Board.
		NO	Change motor.

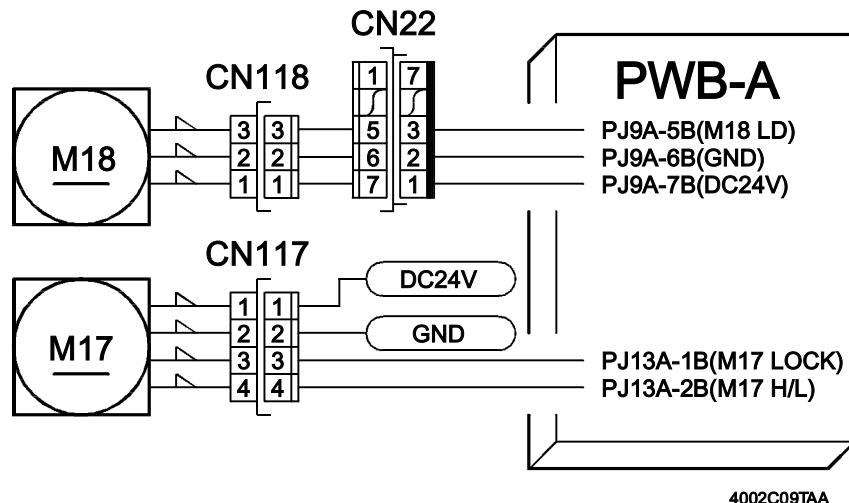
### C0010

Step	Check	Result	Action
1	PC Drum Drive Motor turns when the Start key is pressed.	NO	Correct drive coupling.
2	PC Drum Drive Motor rotation: the voltage across PJ7A-3A on Master Board and GND is DC5V (motor deenergized) and DC0V (motor energized) when the Start key is pressed.	NO	Change Master Board.
3	PC Drum Drive Motor rotation: the voltage across PJ7A-4A on Master Board and GND is DC5V (motor deenergized) and DC0V (motor energized) when the Start key is pressed.	YES	Change Master Board.
		NO	Change motor.

(2) C0040: Suction Fan Motor's failure to turn

C004C: Ventilation Fan Motor's failure to turn

Relevant Electrical Parts	
Suction Fan Motor (M17) Ventilation Fan Motor (M18)	Master Board (PWB-A)



C0040

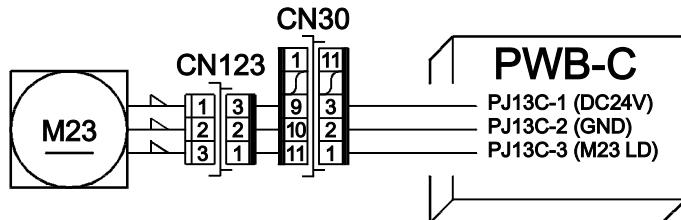
Step	Check	Result	Action
1	Suction Fan Motor turns when the malfunction is reset.	NO	Check motor for installation.
2	Suction Fan Motor rotation: the voltage across PJ13A-1B on Master Board and GND is DC5V after the malfunction has been reset.	YES	Change Master Board.
		NO	Change motor.

C004C

Step	Check	Result	Action
1	Ventilation Fan Motor rotation: the voltage across PJ9A-7B on Master Board and GND is DC24V when the Start key is pressed.	NO	Change Master Board.
2	Ventilation Fan Motor rotation: the voltage across PJ9A-5B on Master Board and GND is DC0V when the Start key is pressed.	YES	Change Master Board.
		NO	Check motor for installation. Change motor.

**(3) C0042: Fusing Unit Cooling Fan Motor's failure to turn**

Relevant Electrical Parts	
Fusing Unit Cooling Fan Motor (M23)	Power Supply Board (PWB-C)



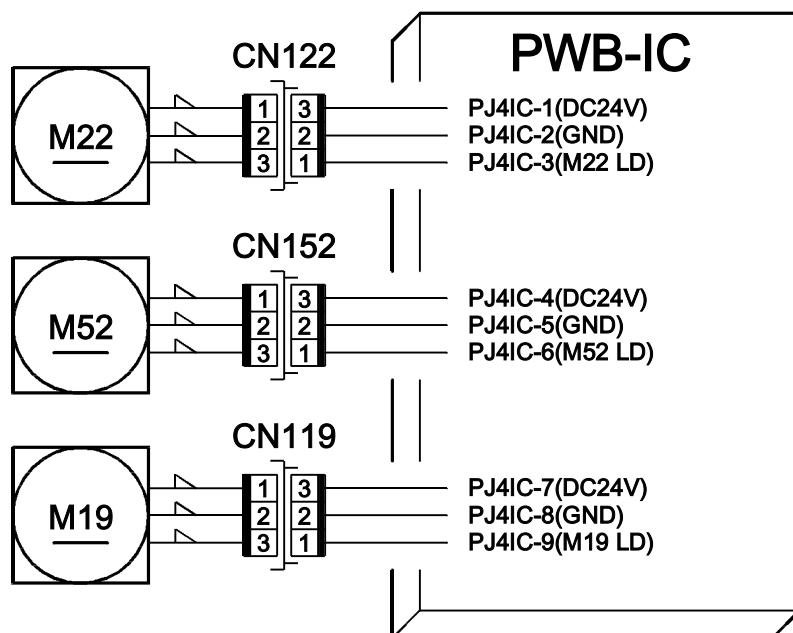
4002C24TAA

**C0042**

Step	Check	Result	Action
1	Fusing Unit Cooling Fan Motor rotation: the voltage across PJ13C-1 on Power Supply Board and GND is DC24V (during high-speed rotation) and DC16V (during low-speed rotation) after the malfunction has been reset.	NO	Change Power Supply Board.
2	Fusing Unit Cooling Fan Motor rotation: the voltage across PJ13C-3 on Power Supply Board and GND is DC5V after the malfunction has been reset.	YES	Change Master Board.
		NO	Check motor for installation. Change motor.

- (4) C0045: IR Cooling Fan Motor malfunction  
 C0046: PH Cooling Fan Motor 1 malfunction  
 C0047: PH Cooling Fan Motor 2 malfunction

Relevant Electrical Parts	
PH Cooling Fan Motor 2 (M19) PH Cooling Fan Motor 1 (M22)	IR Cooling Fan Motor (M52) SCP Board (PWB-IC)



4002C10TAA

**C0045**

Step	Check	Result	Action
1	IR Cooling Fan Motor rotation: the voltage across PJ4IC-4 on SCP Board and GND is DC24V (during high-speed rotation) and DC12V (during low-speed rotation) after the malfunction has been reset.	NO	Change SCP Board.
2	IR Cooling Fan Motor rotation: the voltage across PJ4IC-6 on SCP Board and GND is DC5V after the malfunction has been reset.	YES	Change SCP Board.
		NO	Check motor for installation. Change motor.

**C0046**

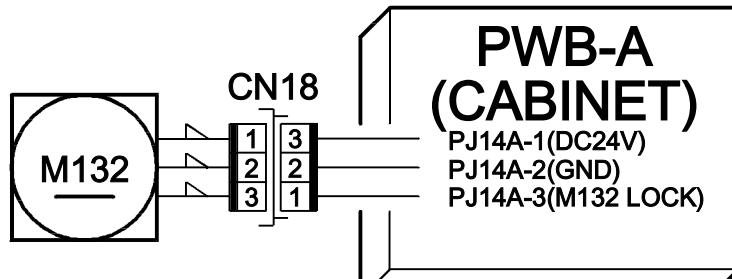
Step	Check	Result	Action
1	PH Cooling Fan Motor 1 rotation: the voltage across PJ4IC-1 on Master Board and GND is DC24V after the malfunction has been reset.	NO	Change SCP Board.
2	PH Cooling Fan Motor 1 rotation: the voltage across PJ4IC-3 on Master Board and GND is DC0V after the malfunction has been reset.	YES	Change SCP Board.
		NO	Check motor for installation. Change motor.

**C0047**

Step	Check	Result	Action
1	PH Cooling Fan Motor 2 rotation: the voltage across PJ4IC-7 on Master Board and GND is DC24V after the malfunction has been reset.	NO	Change SCP Board.
2	PH Cooling Fan Motor 2 rotation: the voltage across PJ4IC-9 on Master Board and GND is DC0V after the malfunction has been reset.	YES	Change SCP Board.
		NO	Check motor for installation. Change motor.

(5) C0049: Paper source option Vertical Transport Cooling Fan Motor malfunction

Relevant Electrical Parts	
Vertical Transport Cooling Fan Motor (M132)	Control Board (PWB-A)



4002C27TAA

C0049

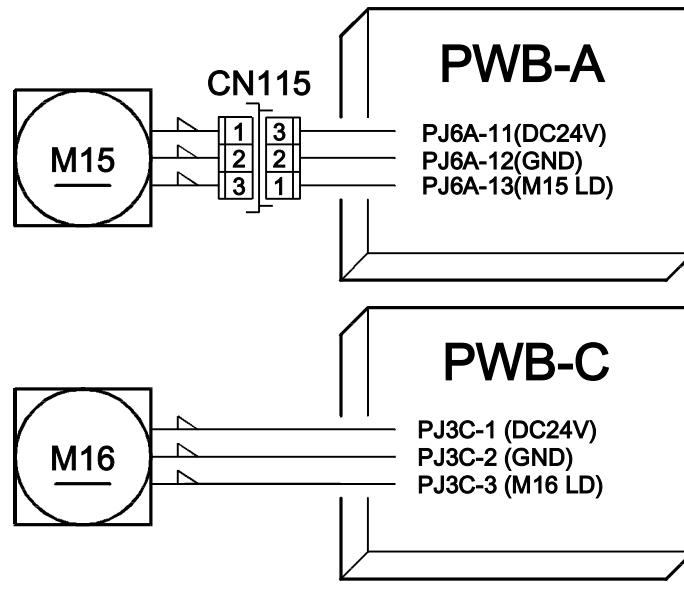
Step	Check	Result	Action
1	Vertical Transport Cooling Fan Motor rotation: the voltage across PJ14A-1 on Power Supply Board and GND is DC24V after the malfunction has been reset.	NO	Change Control Board.
2	Vertical Transport Cooling Fan Motor rotation: the voltage across PJ14A-3 on Power Supply Board and GND is DC0V after the malfunction has been reset.	YES	Change Control Board.
		NO	Check motor for installa- tion. Change motor.



(6) C004E: Power Supply Unit Cooling Fan Motor 1's failure to turn

C004F: Power Supply Unit Cooling Fan Motor 2's failure to turn

Relevant Electrical Parts	
Power Supply Unit Cooling Fan Motor 1 (M16)	Master Board (PWB-A) Power Supply Board (PWB-C)
Power Supply Unit Cooling Fan Motor 2 (M15)	



4002C23TAA

C004E

Step	Check	Result	Action
1	Power Supply Unit Cooling Fan Motor 1 rotation: the voltage across PJ3C-1 on Power Supply Board and GND is DC24V after the malfunction has been reset.	NO	Change Power Supply Board.
2	Power Supply Unit Cooling Fan Motor 1 rotation: the voltage across PJ3C-3 on Power Supply Board and GND is DC5V after the malfunction has been reset.	YES	Check motor for installation. Change motor.
		NO	Change Power Supply Board.

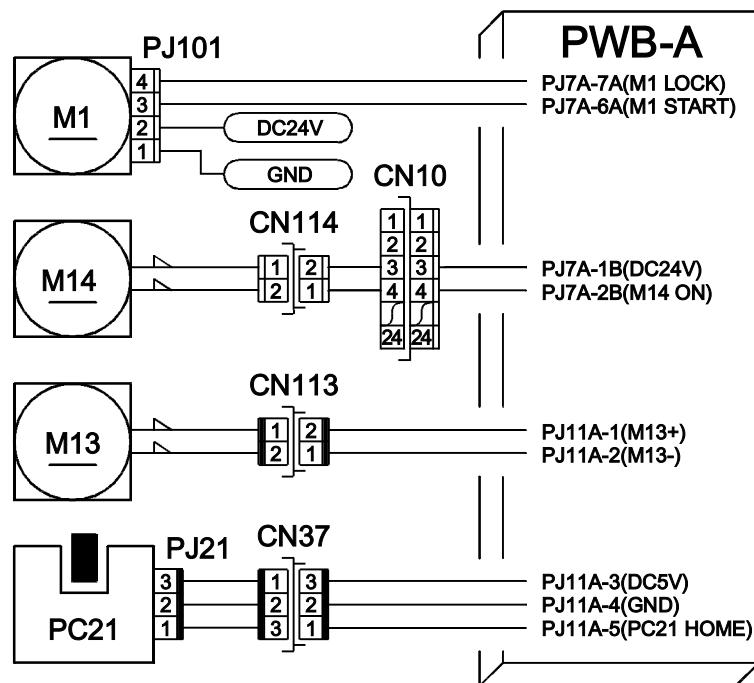
C004F

Step	Check	Result	Action
1	Power Supply Unit Cooling Fan Motor 2 rotation: the voltage across PJ6A-11 on Power Supply Board and GND is DC24V after the malfunction has been reset.	NO	Change Master Board.
2	Power Supply Unit Cooling Fan Motor 2 rotation: the voltage across PJ6A-13 on Power Supply Board and GND is DC5V after the malfunction has been reset.	YES	Check motor for installation. Change motor.
		NO	Change Master Board.



- (7) C0072: Main Hopper Toner Replenishing Motor's failure to turn  
 C0090: Developing Unit Drive Motor's failure to turn

Relevant Electrical Parts	
Toner Bottle Home Position Sensor (PC21) Developing Unit Drive Motor (M1) Main Hopper Toner Replenishing Motor (M13)	Sub Hopper Toner Replenishing Motor (M14) Master Board (PWB-A)



4002C11TAA

**C0072**

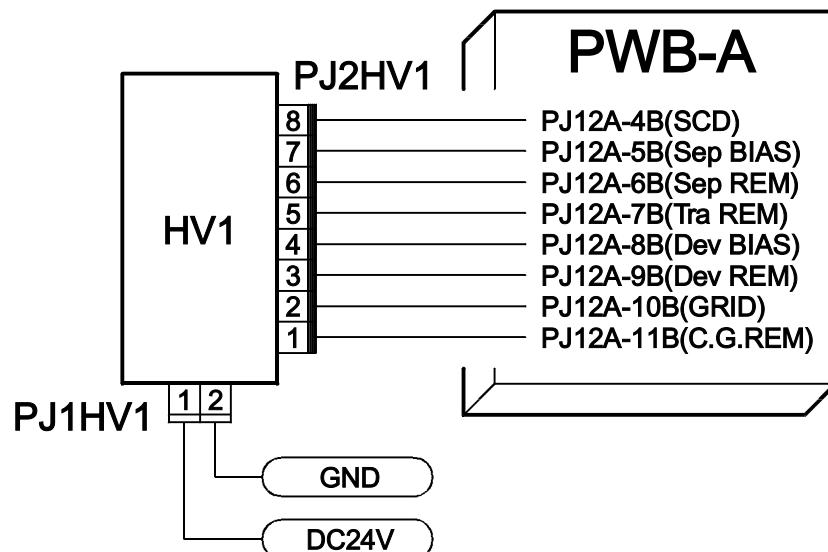
Step	Check	Result	Action
1	Toner Bottle turns when the Toner Bottle is turned a half turn and the Front Door is closed.	NO	Correct drive coupling.
2	I/O check for Toner Bottle Home Position Sensor operation: the voltage across PJ11A-5 on Master Board and GND is DC5V (Toner Bottle at home position) and DC0V (Toner Bottle at a position other than home) when step 1 is performed.	YES	Change Master Board.
		NO	Check sensor for installation. Correct detecting plate. Change sensor.
3	Main Hopper Toner Replenishing Motor rotation: the voltage across PJ11A-1 on Master Board and GND is DC0V (Toner Bottle at a stop) and DC24V (Toner Bottle turning) when step 1 is performed.	YES	Change motor.
		NO	Change Master Board.

**C0090**

Step	Check	Result	Action
1	Developing Unit Drive Motor rotation: the voltage across PJ7A-7A on Master Board and GND is DC5V (motor deenergized) and DC0V (motor energized) when the Start key is pressed.	NO	Change Master Board.
2	Developing Unit Drive Motor rotation: the voltage across PJ7A-6A on Master Board and GND is DC5V (motor deenergized) and DC0V (motor energized) when the Start key is pressed.	YES	Correct drive coupling. Correct installed position of the Developing Unit. Change motor.
		NO	Change Master Board.

(8) C0210: Image Transfer/Paper Separator Corona charge leak detected

Relevant Electrical Parts	
PC Drum Charge/Developing Bias HV (HV1)	Master Board (PWB-A)



4002C12TAA

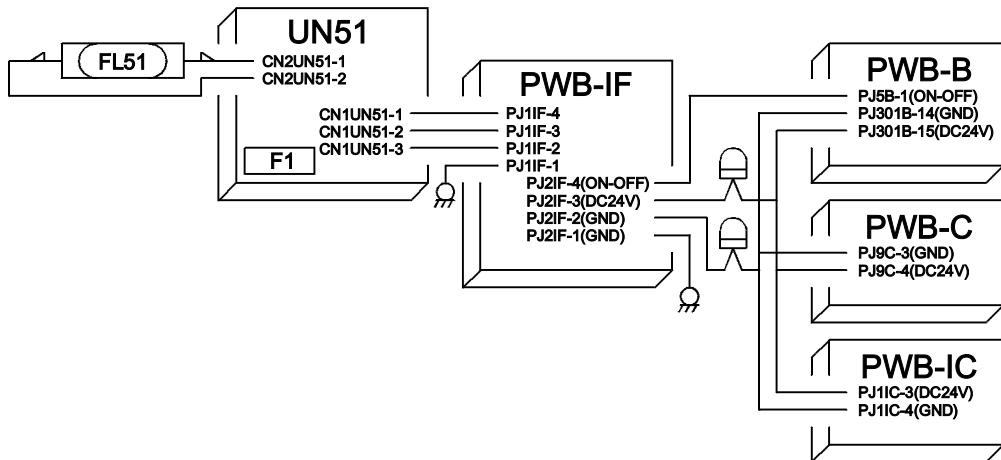
C0210

Step	Check	Result	Action	
1	The Image Transfer/Paper Separator Coronas Unit is installed properly.	NO	Correct installed position.	
2	The Image Transfer/Paper Separator Coronas wires are dirty or have snapped.	YES	Clean or change.	
3	The malfunction code appears even with PJ2HV1 unplugged.	YES	Change Master Board. NO	Change the HV.

**(9) C0400: Exposure Lamp's failure to turn ON**

**C0420: Exposure Lamp turning ON at abnormal timing**

Relevant Electrical Parts	
Exposure Lamp (FL51) Inverter Board (UN51) Lamp Flat Cable (PWB-IF)	Image Processing Board (PWB-B) Power Supply Board (PWB-C) SCP Board (PWB-IC)



4002C26TAA

**C0400, C0420**

Step	Check	Result	Action
1	Exposure Lamp has discolored.	YES	Change Exposure Lamp.
2	"NG" is displayed when "Scanning Check" of "Function (IR)" is run.	YES	Check the optical path. Change Image Processing Board or CCD Board.
3	Power Supply Board operation: the voltage across PJ9C-4 on Power Supply Board and GND is DC24V after the malfunction has been reset.	YES	Check and change, as necessary, flat cable. Change Inverter Board or Image Processing Board.
		NO	Change Power Supply Board.



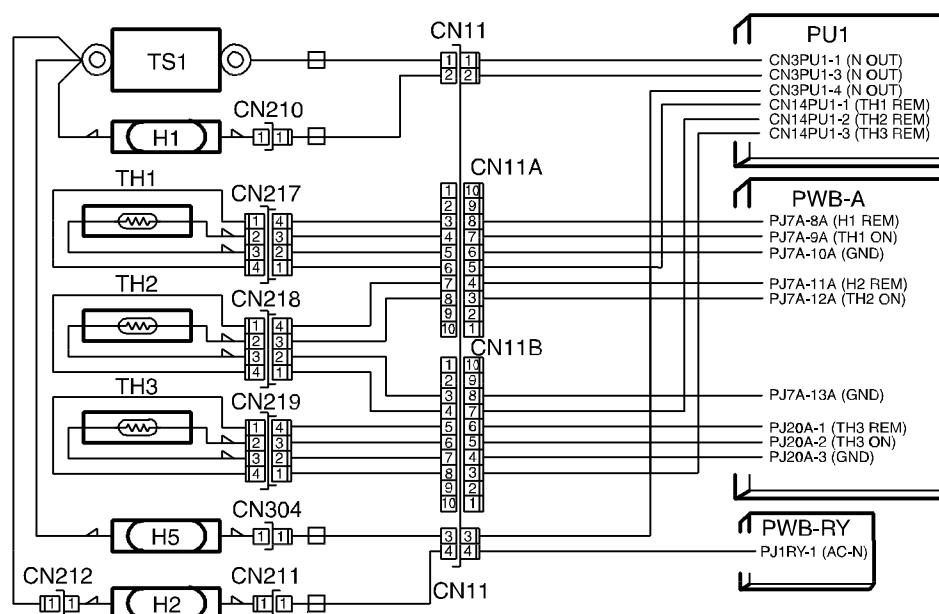
**(10) C0500 (Warming-up failure)**

**C0510 (Abnormally low Upper Fusing Roller temperature)**

**C0520 (Abnormally high fusing temperature)**

**C0540 (Abnormally low Lower Fusing Roller temperature)**

Relevant Electrical Parts	
Upper Fusing Roller Heater Lamp (H1) Lower Fusing Roller Heater Lamp (H2) Fusing Roller Sub Heater Lamp (H5) Upper Fusing Roller Thermistor (TH1) Lower Fusing Roller Thermistor (TH2) Fusing Roller Sub Thermistor (TH3)	Upper Fusing Roller Thermostat (TS1) DC Power Supply Main (PU1) Master Board (PWB-A)



4028T501AA

C0500, C0510, C0540

Step	Check	Result	Action
1	Upper Fusing Roller Heater Lamp and Fusing Roller Sub Heater Lamp ON when the Power Switch are turned ON.	YES	Correct thermistor for mounting position and/or clean.
2	Upper/Lower Fusing Roller Thermistors and Fusing Roller Sub Thermistor are installed properly.	NO	Reinstall.
3	Upper/Lower Fusing Roller Thermistors and Fusing Roller Sub Thermistor are dirty.	NO	Clean.
4	Upper Fusing Roller Thermistor operation: the resistance across CN217-2 and 3 on the Fusing Unit end is infinity with CN217 (4P) disconnected.	YES	Change Upper Fusing Roller Thermistor.
5	Fusing Roller Sub Thermistor operation: the resistance across CN219-2 and 3 on the Fusing Unit end is infinity with CN219 (4P) disconnected.	YES	Change Fusing Roller Sub Thermistor.
6	Lower Fusing Roller Thermistor operation: the resistance across CN218-2 and 3 on the Fusing Unit end is infinity with CN218 (4P) disconnected.	YES	Change Lower Fusing Roller Thermistor.
6	Upper Fusing Roller Thermostat and Fusing Roller Sub Heater Lamp continuity: there is continuity across CN11-1 and 3 with CN11 (4P) disconnected.	NO	Change thermostat and heater lamp.
7	Upper Fusing Roller Heater Lamp continuity: there is continuity across CN11-1 and 2 with CN11 (4P) disconnected.	NO	Change heater lamp.
8	Fusing Roller Sub Heater Lamp continuity: there is continuity across CN11-4 and CN212-1 with CN11 (4P) and CN212 (1P) disconnected.	NO	Change heater lamp.

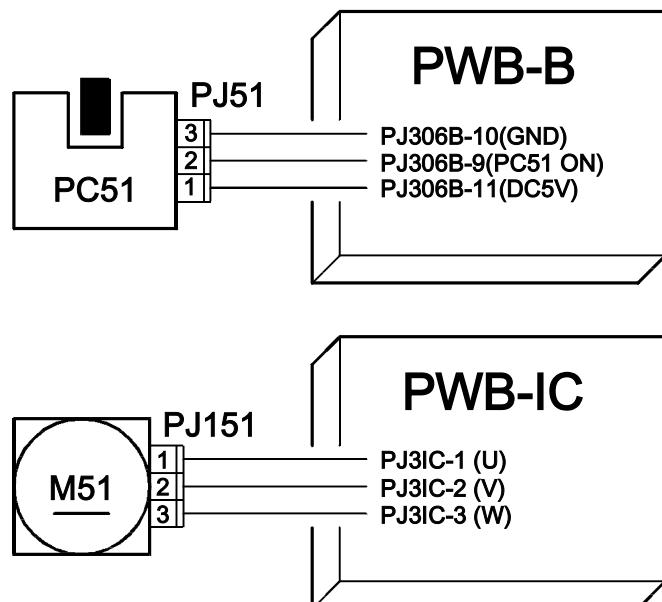
**C0520**

Step	Check	Result	Action
1	Upper Fusing Roller heater Lamp and Fusing Roller Sub Heater Lamp are ON even after the copier has completed warming up. Or lower Fusing roller Heater Lamp is ON when the surface temperature of lower Fusing Roller Heater Lamp is 90 °C or more as indicated on "Level History" under the Tech. Rep. mode.	YES	Change DC Power Supply Main.
2	Upper/Lower Fusing Roller Thermistors and Fusing Roller Sub Thermistor are installed properly.	NO	Reinstall.
3	Upper/Lower Fusing Roller Thermistors and Fusing Roller Sub Thermistor are dirty.	NO	Clean.
4	Upper Fusing Roller Thermistor operation: the resistance across CN217-2 and 3 on the Fusing Unit end is infinity with CN217 (4P) disconnected.	YES	Change Upper Fusing Roller Thermistor.
5	Fusing Roller Sub Thermistor operation: the resistance across CN219-2 and 3 on the Fusing Unit end is infinity with CN219 (4P) disconnected.	YES	Change Fusing Roller Sub Thermistor.
5	Lower Fusing Roller Thermistor operation: the resistance across CN218-2 and 3 on the Fusing Unit end is infinity with CN218 (4P) disconnected.	YES	Change Lower Fusing Roller Thermistor.

(11) C0602: Cable unwound

C0650: SHOME signal error

Relevant Electrical Parts	
Scanner Motor (M51)	Image Processing Board (PWB-B)
Scanner Reference Position Sensor (PC51)	SCP Board (PWB-IC)



4002C14TAB

**C0602**

Step	Check	Result	Action
1	Scanner moves as moved manually.	NO	Correct drive coupling. Rewind cables.
2	Connector on SCP Board is connected properly: PJ3IC on PWB-IC.	NO	Connect.
3	Scanner Motor turns when the Start key is pressed.	NO	Correct drive coupling. Change motor or SCP Board.
4	Connector on Image Processing Board is connected properly: PJ306B on PWB-B.	NO	Connect.
5	I/O check for Scanner Reference Position Sensor	YES	Change Image Processing Board.
		NO	Correct actuator. Change sensor.

**C0605**

Step	Check	Result	Action
1	Scanner moves as moved manually.	NO	Correct drive coupling. Rewind cables.
2	Connector on Image Processing Board is connected properly: PJ306B on PWB-B.	NO	Connect.
3	Light Blocking Plate is installed properly.	NO	Correct.
4	I/O check for Scanner Reference Position Sensor	YES	Change Image Processing Board.
		NO	Correct actuator. Change sensor.

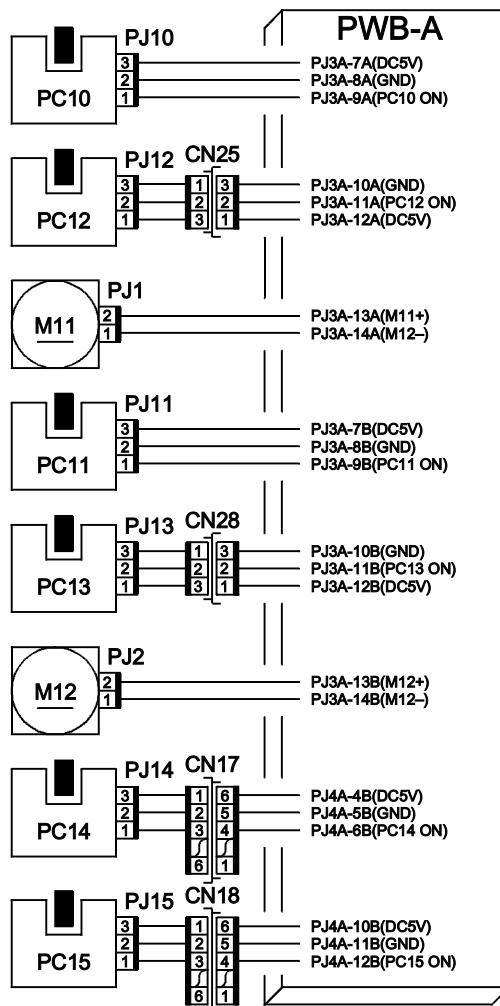
(12) C0910: 2<sup>nd</sup> Drawer Paper Lift-Up Sensor malfunction

C0914: 2<sup>nd</sup> Drawer Lift-Up Motor's failure to turn

C0920: 1<sup>st</sup> Drawer Paper Lift-Up Sensor malfunction

C0924: 1<sup>st</sup> Drawer Lift-Up Motor's failure to turn

Relevant Electrical Parts	
2 <sup>nd</sup> Drawer Set Sensor (PC11)	1 <sup>st</sup> Drawer Set Sensor (PC10)
2 <sup>nd</sup> Drawer Lift-Up Motor Pulse Sensor (PC13)	1 <sup>st</sup> Drawer Lift-Up Motor Pulse Sensor (PC12)
2 <sup>nd</sup> Drawer Paper Lift-Up Sensor (PC15)	1 <sup>st</sup> Drawer Paper Lift-Up Sensor (PC14)
2 <sup>nd</sup> Drawer Lift-Up Motor (M12)	1 <sup>st</sup> Drawer Lift-Up Motor (M11) Master Board (PWB-A)



4002C15TAA

C0910, C0914

Step	Check	Result	Action
1	Lift-Up Motor turns when the 2 <sup>nd</sup> Drawer is slid out and then back in.	NO	Correct drive coupling.
2	2 <sup>nd</sup> Drawer Lift-Up Motor rotation: the voltage across PJ3A-13B on Master Board and GND is DC0V (motor deenergized) and DC24V (motor energized) after the 2 <sup>nd</sup> Drawer has been slid back in.	YES	Change motor.
		NO	Change Master Board.
3	I/O check for 2 <sup>nd</sup> Drawer Lift-Up Motor Pulse Sensor operation: the voltage across PJ3A-11B on Master Board and GND changes in the range between DC0V and DC5V while 2 <sup>nd</sup> Drawer Lift-Up Motor is turning.	YES	Change Master Board.
		NO	Correct drive coupling. Change sensor.
4	I/O check for 2 <sup>nd</sup> Drawer Paper Lift-Up Sensor: the voltage across PJ4A-12B on Master Board and GND is DC0V (sensor unblocked) and DC5V (sensor blocked).	YES	Change Master Board.
		NO	Change sensor.

C0920, C0924

Step	Check	Result	Action
1	Lift-Up Motor turns when the 1 <sup>st</sup> Drawer is slid out and then back in.	NO	Correct drive coupling.
2	1 <sup>st</sup> Drawer Lift-Up Motor rotation: the voltage across PJ3A-13A on Master Board and GND is DC0V (motor deenergized) and DC24V (motor energized) after the 1 <sup>st</sup> Drawer has been slid back in.	YES	Change motor.
		NO	Change Master Board.
3	I/O check for 1 <sup>st</sup> Drawer Lift-Up Motor Pulse Sensor operation: the voltage across PJ3A-11A on Master Board and GND changes in the range between DC0V and DC5V while 1 <sup>st</sup> Drawer Lift-Up Motor is turning.	YES	Change Master Board.
		NO	Correct drive coupling. Change sensor.
4	I/O check for 1 <sup>st</sup> Drawer Paper Lift-Up Sensor: the voltage across PJ4A-6B on Master Board and GND is DC0V (sensor unblocked) and DC5V (sensor blocked).	YES	Change Master Board.
		NO	Change sensor.

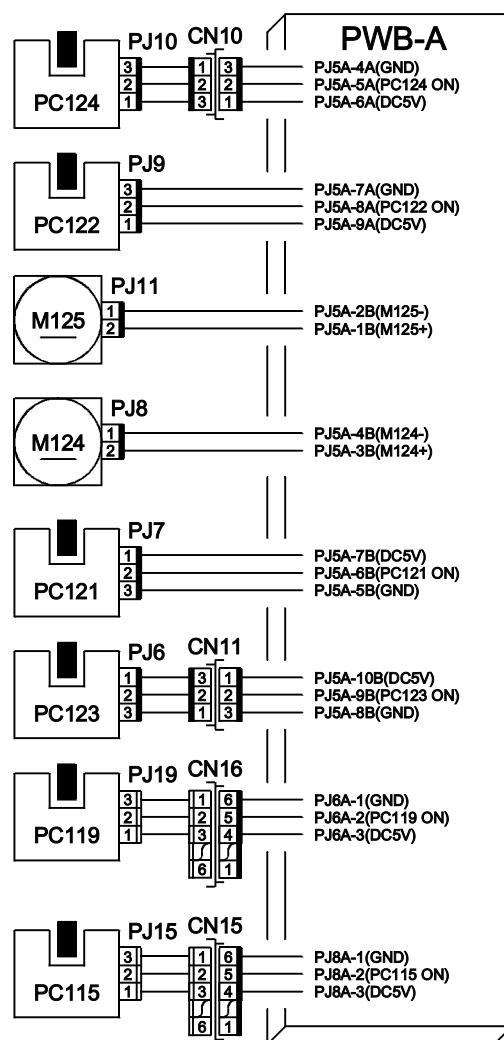
(13) C0900: 3<sup>rd</sup> Drawer Paper Lift-Up Sensor malfunction

C0904: 3<sup>rd</sup> Drawer Paper Lift-Up Motor's failure to turn

C0950: 4<sup>th</sup> Drawer Paper Lift-Up Sensor malfunction

C0954: 4<sup>th</sup> Drawer Paper Lift-Up Motor's failure to turn

Relevant Electrical Parts	
3 <sup>rd</sup> Drawer Paper Lift-Up Sensor (PC115)	4 <sup>th</sup> Drawer Paper Lift-Up Sensor (PC119)
3 <sup>rd</sup> Drawer Set Sensor (PC121)	4 <sup>th</sup> Drawer Set Sensor (PC122)
3 <sup>rd</sup> Drawer Lift-Up Motor Pulse Sensor (PC123)	4 <sup>th</sup> Drawer Lift-Up Motor Pulse Sensor (PC124)
3 <sup>rd</sup> Drawer Paper Lift-Up Motor (M124)	4 <sup>th</sup> Drawer Paper Lift-Up Motor (M125)
	Control Board (PWB-A): PF-208



4002C16TAA

C0900, C0904

Step	Check	Result	Action
1	Lift-Up Motor turns when the 3 <sup>rd</sup> Drawer is slid out and then back in.	NO	Correct drive coupling.
2	3 <sup>rd</sup> Drawer Paper Lift-Up Motor rotation: the voltage across PJ5A-3B on Control Board and GND is DC0V (motor deenergized) and DC24V (motor energized) after the 3 <sup>rd</sup> Drawer has been slid back in.	YES	Change motor.
		NO	Change Control Board.
3	I/O check for 3 <sup>rd</sup> Drawer Lift-Up Motor Pulse Sensor operation: the voltage across PJ5A-9B on Control Board and GND changes in the range between DC0V and DC5V while 3 <sup>rd</sup> Drawer Paper Lift-Up Motor is turning.	YES	Change Control Board.
		NO	Correct drive coupling. Change sensor.
4	I/O check for 3 <sup>rd</sup> Drawer Paper Lift-Up Sensor: the voltage across PJ8A-2 on Control Board and GND is DC0V (sensor unblocked) and DC5V (sensor blocked).	YES	Change Control Board.
		NO	Change sensor.

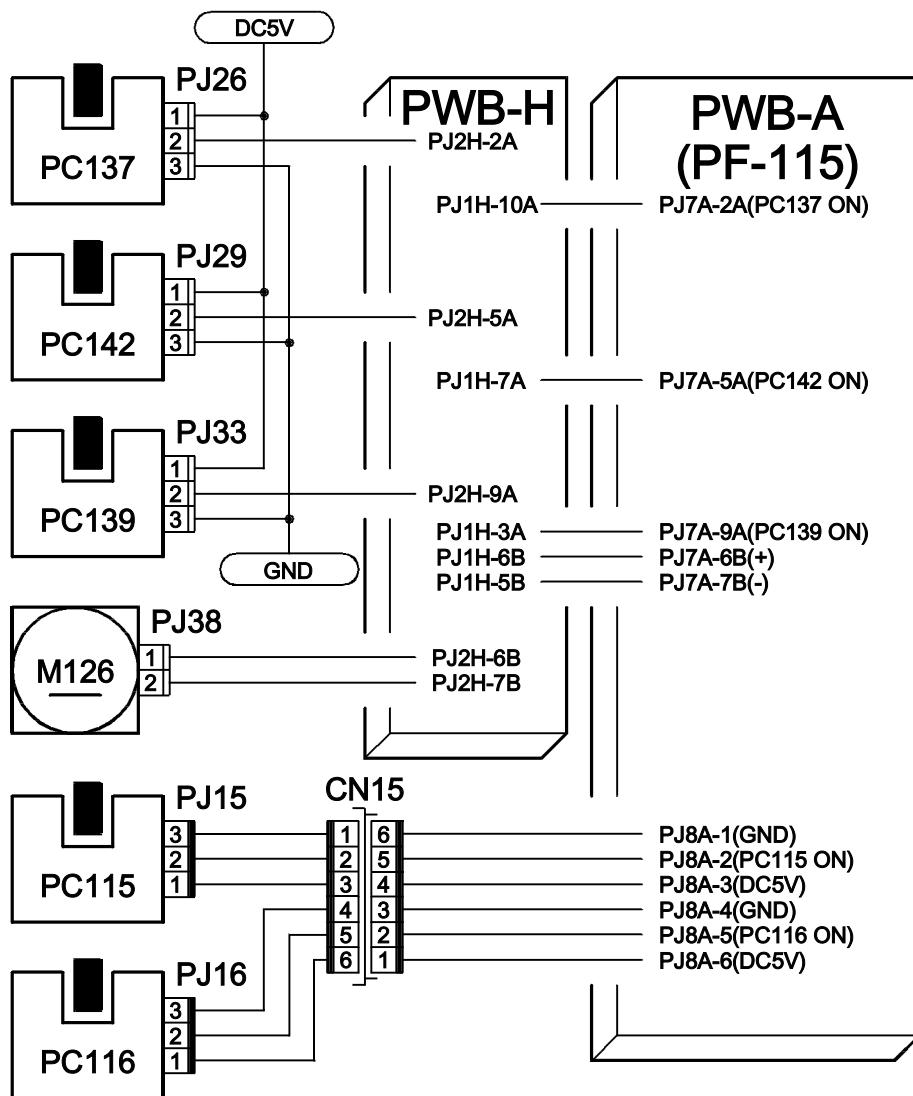
C0950, C0954

Step	Check	Result	Action
1	Lift-Up Motor turns when the 4 <sup>th</sup> Drawer is slid out and then back in.	NO	Correct drive coupling.
2	4 <sup>th</sup> Drawer Paper Lift-Up Motor rotation: the voltage across PJ5A-1B on Control Board and GND is DC0V (motor deenergized) and DC24V (motor energized) after the 4 <sup>th</sup> Drawer has been slid back in.	YES	Change motor.
		NO	Change Control Board.
3	I/O check for 4 <sup>th</sup> Drawer Lift-Up Motor Pulse Sensor operation: the voltage across PJ5A-5A on Control Board and GND changes in the range between DC0V and DC5V while 4 <sup>th</sup> Drawer Paper Lift-Up Motor is turning.	YES	Change Control Board.
		NO	Correct drive coupling. Change sensor.
4	I/O check for 4 <sup>th</sup> Drawer Paper Lift-Up Sensor: the voltage across PJ6A-2 on Control Board and GND is DC0V (sensor unblocked) and DC5V (sensor blocked).	YES	Change Control Board.
		NO	Change sensor.

**(14) C0990: Main Tray lifting motion failure**

**C0994: Main Tray Elevator Motor's failure to turn**

Relevant Electrical Parts	
3 <sup>rd</sup> Drawer Paper Lift-Up Sensor (PC115) 3 <sup>rd</sup> Drawer Paper Empty Sensor (PC116) Lower Position Overrun Detecting Sensor (PC137) Elevator Lower Position Sensor (PC139)	Elevator Motor Pulse Sensor (PC142) Elevator Motor (M126) Cabinet Transport Board (PWB-H) Control Board (PWB-A): PF-115



4002C17IAA

C0990

Step	Check	Result	Action
1	I/O check for 3 <sup>rd</sup> Drawer Paper Lift-Up Sensor operation: the voltage across PJ8A-2 on Control Board and GND is DC5V (sensor unblocked) and DC0V (sensor blocked).	YES	Change Control Board.
		NO	Change sensor.
2	I/O check for Lower Position Overrun Detecting Sensor operation: the voltage across PJ7A-2A on Control Board and GND is DC5V (sensor unblocked) and DC0V (sensor blocked).	YES	Change Control Board.
		NO	Change sensor or Cabinet Transport Board. Change flat cable.
3	I/O check for Elevator Lower Position Sensor operation: the voltage across PJ7A-9A on Control Board and GND is DC5V (sensor unblocked) and DC0V (sensor blocked).	YES	Change Control Board.
		NO	Correct actuator. Change sensor or Cabinet Transport Board. Change flat cable.

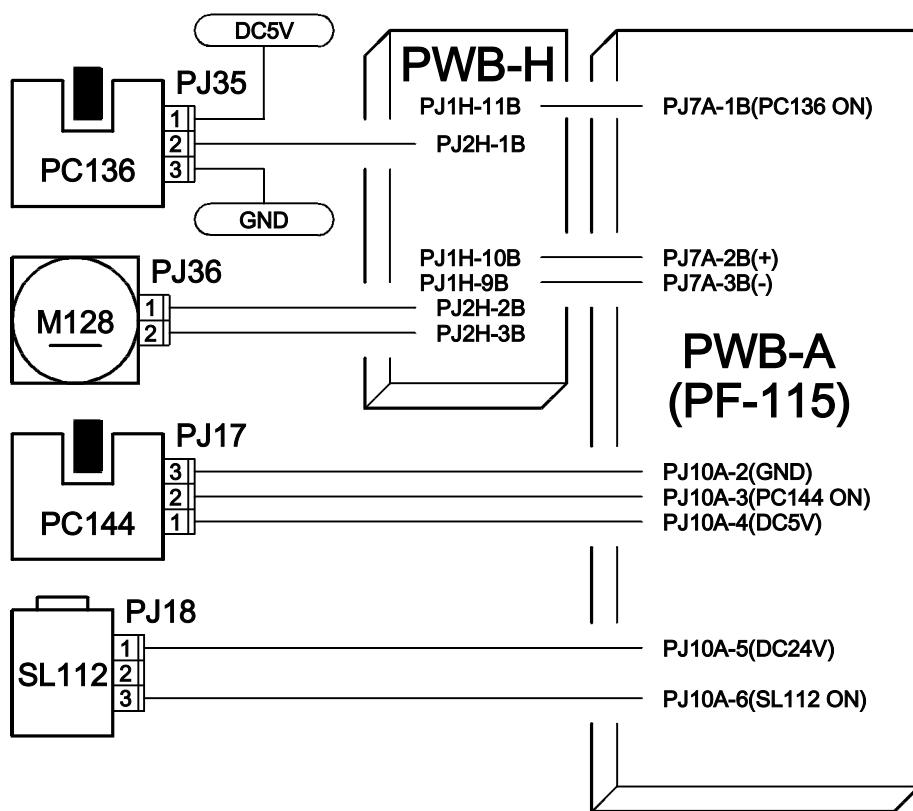
C0994

Step	Check	Result	Action
1	Elevator Motor turns when the Paper Descent key is pressed.	NO	Correct drive coupling.
2	Elevator Motor rotation: the voltage across PJ7A-6B (ascent)/PJ7A-7B (descent) on Control Board and GND is DC0V (motor deenergized) and DC24V (motor energized) when the drawer is slid in or the Paper Descent key is pressed.	YES	Change motor or Cabinet Transport Board. Change flat cable.
		NO	Change Control Board.
3	I/O check for Elevator Motor Pulse Sensor operation: the voltage across PJ7A-5A on Control Board and GND changes in the range between DC0V and DC5V while the Elevator Motor is turning.	YES	Change Control Board.
		NO	Change gear or sensor.

(15) C0996: Main Tray lock release failure

C0997: Shift Gate malfunction

Relevant Electrical Parts	
Shift Gate Position Sensor (PC136)	3 <sup>rd</sup> Drawer Lock Solenoid (SL112)
3 <sup>rd</sup> Drawer Set Sensor (PC144)	Cabinet Transport Board (PWB-H)
Shift Gate Motor (M128)	Control Board (PWB-A): PF-115



4002C18TAA

**C0996**

Step	Check	Result	Action
1	3 <sup>rd</sup> Drawer Lock Solenoid operation: the voltage across PJ10A-6 on Control Board and GND is DC24V (solenoid deenergized) and DC0V (solenoid energized) when the Paper Descent key is pressed and the Main Tray completes its descent motion.	YES	Change solenoid.
		NO	Change Control Board.

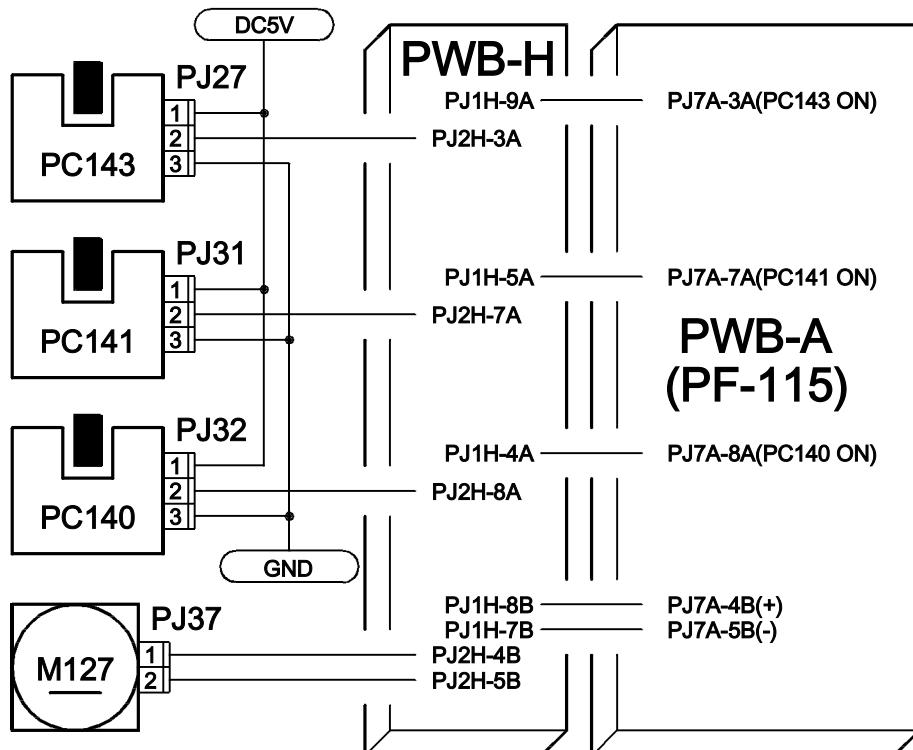
**C0997**

Step	Check	Result	Action
1	Shift Gate Motor rotation: the voltage across PJ7A-2B on Control Board and GND is DC0V (motor deenergized) and DC24V (motor energized) when the drawer is slid in with paper loaded on the Shift Tray only.	YES	Correct drive coupling. Change motor or flat cable.
		NO	Change Control Board. Change Cabinet Transport Board.
2	I/O check for Shift Gate Position Sensor operation: the voltage across PJ7A-1B on Control Board and GND is DC5V (sensor unblocked) and DC0V (sensor blocked) when the drawer is slid in with paper loaded on the Shift Tray only.	YES	Change Control Board. Change Cabinet Transport Board.
		NO	Change sensor. Change flat cable.

**(16) C0998: Shifter return failure**

**C099C: Shift Motor's failure to turn**

Relevant Electrical Parts	
Shifter Home Position Sensor (PC140) Shifter Return Position Sensor (PC141) Shift Motor Pulse Sensor (PC143)	Shift Motor (M127) Cabinet Transport Board (PWB-H) Control Board (PWB-A): PF-115



4002C19TAA

C0998

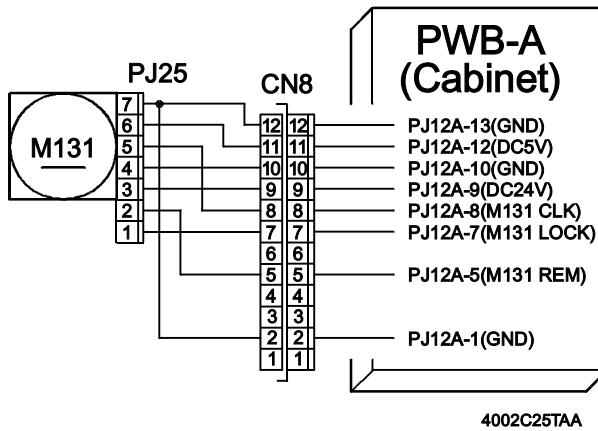
Step	Check	Result	Action
1	I/O check for Shifter Return Position Sensor operation: the voltage across PJ7A-7A on Control Board and GND is DC5V (sensor unblocked) and DC0V (sensor blocked).	YES	Change Control Board.
		NO	Change sensor or Cabinet Transport Board. Change flat cable.
2	I/O check for Shifter Home Position Sensor operation: the voltage across PJ7A-8A on Control Board and GND is DC5V (sensor unblocked) and DC0V (sensor blocked).	YES	Change Control Board.
		NO	Change sensor or Cabinet Transport Board. Change flat cable.

C099C

Step	Check	Result	Action
1	Shift Motor turns when the 3 <sup>rd</sup> Drawer is slid in with paper loaded on the Shift Tray (paper is moved to the Main Tray).	NO	Correct drive coupling.
2	Shift Motor rotation: the voltage across PJ7A-4B on Control Board and GND is DC0V (motor deenergized) and DC24V (motor energized) in step 1.	YES	Change motor or Cabinet Transport Board. Change flat cable.
		NO	Change Control Board.
3	I/O check for Shift Motor Pulse Sensor operation: the voltage across PJ7A-3A on Control Board and GND changes in the range between DC0V and DC5V while the Shift Motor is turning.	YES	Change Control Board.
		NO	Correct drive coupling. Change sensor.

**(17) C0D50: Duplex Horizontal Transport Motor malfunction**

Relevant Electrical Parts	
Horizontal Transport Motor (M131)	Control Board (PWB-A)

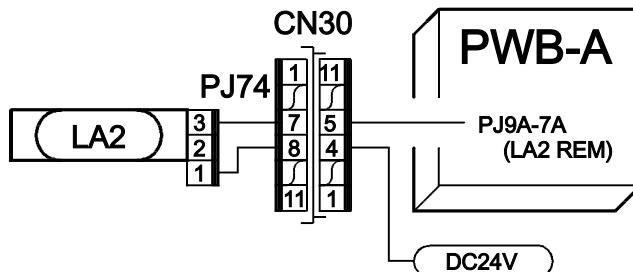


**C0D50**

Step	Check	Result	Action
1	Horizontal Transport Motor turns when the Start key is pressed.	NO	Correct drive coupling.
2	Horizontal Transport Motor rotation: the voltage across PJ12A-5 on Control Board and GND is DC5V (motor deenergized) and DC0V (motor energized) when the Start key is pressed.	NO	Change Control Board.
3	Horizontal Transport Motor rotation: the voltage across PJ12A-7 on Control Board and GND is DC5V (motor deenergized) and DC0V (motor energized) when the Start key is pressed.	YES	Change Control Board.
		NO	Change motor.

**(18) C0E00: Main Erase Lamp's failure to turn ON**

Relevant Electrical Parts	
Main Erase Lamp (LA2)	Master Board (PWB-A)



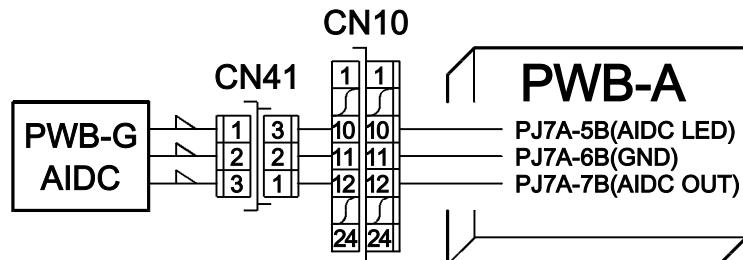
4002C20TAA

**C0E00**

Step	Check	Result	Action
1	Main Erase Lamp ON: the voltage across PJ9A-7A on Master Board and GND is DC24V (lamp OFF) and DC0V (lamp ON) when the Start key is pressed.	YES	Change Master Board.
2	Main Erase Lamp ON: the voltage across PJ9A-7A on Master Board and GND is DC24V in the standby state.	YES	Change lamp.
		NO	Change Master Board.

**(19) C0F24: AIDC Sensor contamination correction failure**

Relevant Electrical Parts	
AIDC Sensor Board (PWB-G)	Master Board (PWB-A)



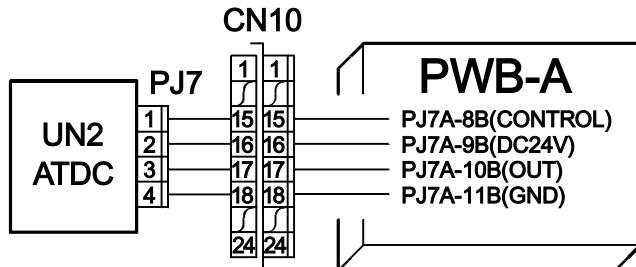
4002C21TAA

**C0F24**

Step	Check	Result	Action
1	PJ7A, CN10, and CN41 are plugged securely into Master Board.	NO	Plug them in securely.
2	Photosensor/LED of the AIDC Sensor are contaminated.	YES	Clean.
		NO	Change AIDC Sensor Board. Change Master Board.

**(20) C0F32: ATDC Sensor malfunction**

Relevant Electrical Parts	
ATDC Sensor (UN2)	Master Board (PWB-A)



4002C22TAA

**C0F32**

Step	Check	Result	Action
1	PJ7A on Master Board, CN10, and PJ7 on the sensor are properly connected.	NO	Plug them in securely.
2	ATDC Sensor operation: the voltage across PJ7A-10B on Master Board and GND changes in the range between DC0.5V and DC4.5V during a copy cycle.	YES	Change Master Board.
		NO	Change sensor.

**(21) C10XX to C18XX**

- These malfunctions are concerned with faulty symptoms relating to software, hardware, and communications.

Code	Action
C10XX C11XX C12XX	<ol style="list-style-type: none"> <li>1. Reset the malfunction and turn OFF and ON the Power Switch.</li> <li>2. If the same malfunction persists, check cables and connectors for proper connection.</li> <li>3. If they are okay, change Image Processing Board, Memory Board, or Hard Disk Drive.</li> </ol>
C12CX	<ol style="list-style-type: none"> <li>1. Run "Hard Disk Format" selected in the following sequence: Tech. Rep. Mode → Function → Image Memory.</li> <li>2. If the same malfunction persists, change Hard Disk Drive.</li> <li>3. If the malfunction is detected a third time, change Memory Board.</li> </ol>
C1300	<ol style="list-style-type: none"> <li>1. Reset the malfunction and turn OFF and ON the Power Switch.</li> <li>2. If the same malfunction persists, check connectors of Polygon Motor and Master Board.</li> <li>3. If connections are okay, change PH Unit, Master Board, or Power Supply Board.</li> </ol>
C1326	<ol style="list-style-type: none"> <li>1. Reset the malfunction and turn OFF and ON the Power Switch.</li> <li>2. If the same malfunction persists, change Memory Board or Master Board.</li> </ol>
C1330 C1334	<ol style="list-style-type: none"> <li>1. Reset the malfunction and turn OFF and ON the Power Switch.</li> <li>2. If the same malfunction persists, run "Mem. → Prn" selected from "I.R. ↔ Mem. ↔ Prn" selected in the following sequence: Tech. Rep. Mode → Function → Image Memory.</li> <li>3. If the malfunction is detected a third time, change Master Board or Image Processing Board.</li> </ol>
C133B	<ol style="list-style-type: none"> <li>1. Reset the malfunction and turn OFF and ON the Power Switch.</li> <li>2. Check the option I/F cable for proper connection.</li> <li>3. If the connection is okay, change the CPU Board of the option, or Master Board.</li> </ol>
C13F1	<ol style="list-style-type: none"> <li>1. Reset the malfunction.</li> <li>2. If the same malfunction persists, check the Image Processing Board connector for proper connection.</li> <li>3. If the connection is okay, change the PH Unit, Image Processing Board, or Master Board.</li> </ol>
C13F4~ C13F8 C13FAB C13FC	<ol style="list-style-type: none"> <li>1. Reset the malfunction.</li> <li>2. If the same malfunction persists, change the PH Unit.</li> <li>3. If the same malfunction is detected again, change the PH Unit.</li> <li>4. If the malfunction is detected a third time, change Image Processing Board.</li> </ol>
C13F9	<ol style="list-style-type: none"> <li>1. Reset the malfunction.</li> <li>2. If the same malfunction persists, change the Master Board.</li> </ol>



Code	Action
C1401	1. Reset the malfunction.
C1402	2. If the same malfunction persists, change the Image Processing Board.
C1410	
C1426	
C1428	
C1429	
C142A	
C1430	
C143E	See the option service manual.
C1440	1. Reset the malfunction. 2. Check that the Original Glass is properly installed. 3. Check the optical system. 4. If the optical system has been checked okay, change Memory Board.
C1441	1. Reset the malfunction. 2. Check that the Original Glass is properly installed. 3. Check for extraneous light and check to see if the CCD Assy and mirrors are installed at the correct positions. 4. If the same malfunction is detected again, change Image Processing Board.
C1450	1. Reset the malfunction. 2. If the same malfunction persists, check the cables, timing belt, and other drive transmission mechanism from the Scanner Motor to the Scanner. 3. If step 2 has been checked okay, change Image Processing Board.
C1461	1. Reset the malfunction.
C1470	2. If the same malfunction persists, change Image Processing Board.
C1471	
C1472	
C143E	See the option service manual.
C1499	1. Reset the malfunction. 2. If the same malfunction persists, check CN152 of IR Cooling Fan Motor and PJ4IC of SCP Board for proper connection. 3. If the connections are okay, change motor or SCP Board.
C18XX	1. Reset the malfunction. 2. If the same malfunction persists, change Image Processing Board.

**(22) Copier does not turn ON.**

Relevant Electrical Parts	
Power Switch (S1) Front Door Interlock Switch (S21) Upper Left Door Interlock Switch (S22) Main Relay (RY1)	DC Power Supply Main (PU1) DC Power Supply Sub (PU2) Power Supply Board (PWB-C) Master Board (PWB-A)

- Main Relay does not turn ON.

Step	Check	Result	Action
1	Power supply voltage check: there is a rated AC voltage supply across CN1PU1-1 and 3 of DC Power Supply Main and across PJ1PU2-1 and 3 of DC Power Supply Sub when the power cord is plugged in the power outlet.	NO	Check wall power outlet voltage. Check power cord for continuity. Check harness between DC Power Supply Main and Sub for continuity.
2	DC Power Supply Sub operation: the voltage across PJ2PU2-1 and 2 of DC Power Supply Sub is DC5V when the power cord is plugged in the power outlet.	NO	Change DC Power Supply Sub.
3	DC Power Supply Main operation: the voltage across PJ12PU1-1 and 5 of DC Power Supply Main is DC5V and the voltage across PJ12PU1-2 and 5 of DC Power Supply Main is DC5V when the Power Switch is turned ON.	NO	Check harness.
4	DC Power Supply Main operation: the voltage across PJ12PU1-2 and 5 of DC Power Supply Main is DC0.5V to 1.0V when the Power Switch is turned ON.	NO	Check harness.
		YES	Change DC Power Supply Main.
5	Power Switch operation: the voltage across PJ15A-3 on Master Board and GND is DC5V (switch OFF) and DC0V (switch ON).	NO	Check and change, as necessary, Power Switch.
6	Front Door Interlock Switch operation: the voltage across PJ6C-1 on Power Supply Board and GND is DC0V (Power Switch OFF) and DC24V (Power Switch ON).	NO	Check harness. Change Power Supply Board.
7	Upper Left Door Interlock Switch operation: the voltage across PJ6A-2 on Master Board and GND is DC5V when the Upper Left Door is open.	NO	Check harness. Change Master Board.
8	Front Door Interlock Switch and Upper Left Door Interlock Switch operation: the voltage across PJ6C-2 on Power Supply Board and GND is DC24V when both doors are closed.	NO	Readjust the position of, check, or change Front Door Interlock Switch. Check and change, as necessary, Upper Left Door Interlock Switch.



Step	Check	Result	Action
9	Power Supply Board operation: the voltage across PJ5C-3 on Power Supply Board and GND is AC10V when Power Switch is turned ON.	NO	Change Power Supply Board.
		YES	Check Main Relay.

## 5. IMAGE FAILURE

### 5-1. Image Failure Troubleshooting

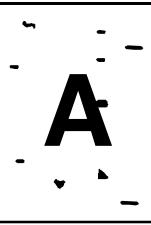
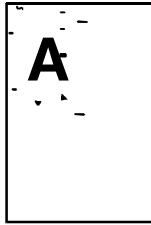
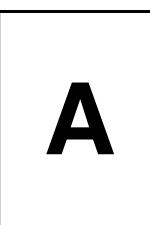
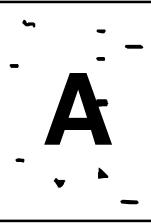
- In this chapter, troubleshooting is divided into "initial checks" and "troubleshooting procedures classified by image failures."
- If any image failure has occurred, first make the initial checks, then proceed to the corresponding image failure troubleshooting procedure.

### 5-2. Initial Checks

- Determine if the failure is attributable to a basic cause or causes.

Section	Step	Check	Result	Action
Installation site	1	See "PRECAUTIONS FOR INSTALLATION" in GENERAL.	NO	Change the installation site.
Paper	2	Recommended paper is used.	NO	Instruct user.
	3	Paper is damp.	YES	Change paper. Instruct user in paper storage.
Original	4	Original not flat	YES	Correct.
	5	Faint original	YES	Instruct user.
	6	Highly transparent original (OHP transparencies, etc.)	YES	Instruct user.
	7	Dirty or scratched Original Glass	YES	Clean or change.
PM parts	8	PM parts relating to image formation have reached the end of cleaning/replacement cycles.	YES	Clean or change. (See Maintenance Schedule.)

- Determine if the failure is attributable to an input system (IR) or output system (engine) fault.

Check	Result	Cause
Copy made at a reduced ratio.	  1177T04YA	Input system
 1177T03YA	  1177T05YA	Output system



### 5-3. Troubleshooting Procedures Classified by Image Failure

- Image Failure Samples

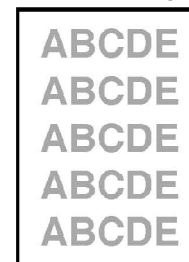
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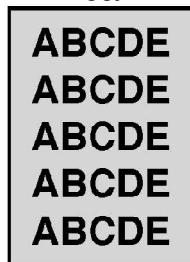
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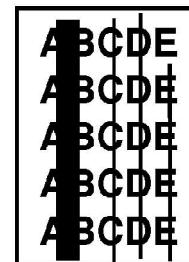
3. Low image density



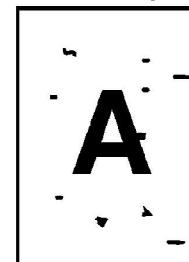
4. Foggy background



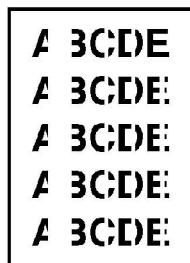
5. Black streaks or bands



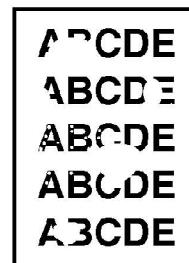
6. Black spots



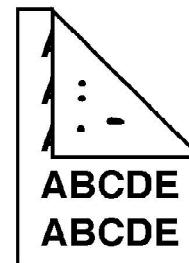
7. Blank streaks or bands



8. Void areas



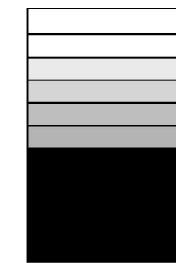
9. Smear on back



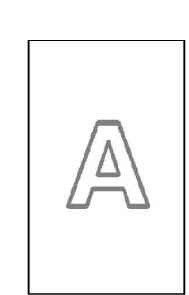
10. Uneven image density



11. Gradation reproduction failure



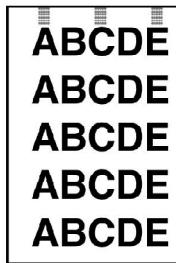
12. Rough image



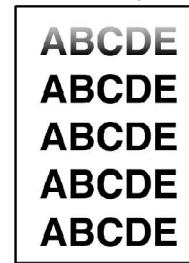
13. Periodically uneven image



14. Traces of PC Drum Paper Separator Fingers



15. Void areas along leading edge



4002T010AA

**(1) Blank copy**

Section	Step	Check	Result	Action
Engine	1	Developing Unit is installed in position.	NO	Install correctly.
	2	There is drive to the Developing Unit.	NO	Correct or change drive coupling.
	3	Image Transfer Corona wire is installed properly.	NO	Install properly.
	4	Wiring between HV and Image Transfer Corona is connected.	YES	Change HV.
			NO	Connect.
	5	Dust-proof shutter is in correct position.	NO	Correct.
IR	6	Wiring between PH Unit and Image Processing Board is connected.	YES	Change PH Unit. Change Image Processing Board.
	1	Scanner shading position is correct.	NO	Correct IR shading position. (See ADJUSTMENT.)

**(2) Black copy**

Section	Step	Check	Result	Action
Engine	1	PC Drum Charge Corona is installed correctly.	NO	Install correctly.
	2	Wiring between HV and PC Drum Charge Corona is connected.	NO	Connect.
	3	PC Drum is properly grounded.	NO	Clean or change PC Drum ground plate.
	4	Developing bias contact is dirty or deformed.	YES	Clean or change developing bias contact.
	5	Wiring between HV and developing bias is connected.	YES	Change HV.
			NO	Connect.
IR	6	Wiring between PH Unit and Master Board is connected.	YES	Change PH Unit. Change Master Board.
	1	Exposure Lamp is ON.	NO	Change Exposure Lamp.
	2	CCD Assy is correctly installed.	NO	Correct installed position. (See DISASSEMBLY.)
	3	Wiring between CCD Assy and Image Processing Board is connected.	YES	Change CCD Assy. Change Image Processing Board.
			NO	Connect.

**(3) Low image density**

Section	Step	Check	Result	Action
Engine	1	Image Transfer Corona is dirty.	YES	Clean or change.
	2	Wiring between HV and Image Transfer Corona is connected.	NO	Connect.
	3	Developing bias contact is dirty or deformed.	YES	Clean or change.
	4	PH lens is dirty.	YES	Clean.
	5	Wiring between HV and developing bias is connected.	NO	Connect.
	6	ATDC Sensor gain value is correct.	NO	Re-input.
IR	1	Shading position is correct.	NO	Correct IR shading position. (See ADJUSTMENT.)

**(4) Foggy background**

Section	Step	Check	Result	Action
—	1	Extraneous light entered copier.	YES	Protect copier from extraneous light.
Engine	1	Cleaning Blade is dirty with foreign matter and paper dust.	YES	Clean or change.
	2	PC Drum is dirty with foreign matter.	YES	Clean or change.
	3	Sleeve/Magnet Roller is dirty.	YES	Clean.
	4	Developing bias contact is dirty or deformed.	YES	Clean or change.
	5	Main Erase Lamp is dirty.	YES	Clean.
IR	1	Mirrors and lens are dirty.	YES	Clean.

**(5) High image density**

Section	Step	Check	Result	Action
Engine	1	Image Transfer Corona is dirty.	YES	Clean or change.
	2	Wiring between HV and Image Transfer Corona is connected.	NO	Connect.
	3	Developing bias contact is dirty or deformed.	YES	Clean or change.
	4	Wiring between HV and developing bias is connected.	NO	Connect.
	5	ATDC Sensor gain value is correct.	NO	Re-input.
IR	1	Shading position is correct.	NO	Correct IR shading position. (See ADJUSTMENT.)

**(6) Black streaks or bands**

Section	Step	Check	Result	Action
Engine	1	PC Drum is dirty.	YES	Clean or change.
	2	Cleaning Blade has correct lateral movement.	NO	Correct lateral movement mechanism.
	3	Cleaning Blade is curled upward or deteriorated.	YES	Change.
	4	Comb Electrode and grid mesh are dirty.	YES	Clean or change.
	5	Upper Fusing Roller is dirty.	YES	Clean.
	6	PH Unit window is dirty.	YES	Clean.
IR	1	Mirrors and lens are dirty.	YES	Clean.
	2	Original Glass is dirty or scratchy.	YES	Clean.
	3	Exposure Lamp is dirty.	YES	Clean.

**(7) Black spots**

Section	Step	Check	Result	Action
Engine	1	PC Drum is dirty.	YES	Clean or change.
	2	PC Drum Paper Separator Fingers are dirty.	YES	Clean or change.
	3	Toner spilled over areas inside copier.	YES	Clean.
	4	Upper Fusing Roller is dirty.	YES	Clean or change.
	5	Toner is caked in the Developing Unit.	YES	Change developer.
	6	Main Erase Lamp is dirty.	YES	Clean.
IR	1	Mirrors and lens are dirty.	YES	Clean.
	2	Original Glass is dirty or scratchy.	YES	Clean or change.

**(8) Blank streaks or bands**

Section	Step	Check	Result	Action
Engine	1	PC Drum is scratchy and dirty.	YES	Clean or change.
	2	PC Drum Paper Separator Fingers are dirty or deformed.	YES	Clean or change.
	3	PC Drum is properly grounded.	NO	Clean or change PC Drum ground plate.
	4	Image Transfer Corona wire is dirty.	YES	Clean or change.
	5	Comb Electrode and grid mesh are dirty.	YES	Clean or change.
	6	Upper Fusing Roller is scratchy or dirty.	YES	Clean or change.
	7	Fusing Paper Separator Fingers are scratchy or dirty.	YES	Change.
	8	DB is plugged with caked toner and foreign matter.	YES	Remove foreign matter. Change developer.
	9	PH Unit window is dirty.	YES	Clean.
IR	1	Mirror is dirty.	YES	Clean.
	2	Shading sheet is dirty.	YES	Clean.
	3	Scanner shading position is correct.	YES	Correct IR shading position. (See ADJUSTMENT.)

**(9) Void areas**

Section	Step	Check	Result	Action
Engine	1	Image Transfer Corona is installed properly.	NO	Install correctly.
	2	Image Transfer Corona wire is installed correctly.	NO	Install correctly.
	3	Upper Fusing Roller is scratchy or dirty.	YES	Change.
	4	Toner is even on Sleeve/Magnet Roller.	NO	Adjust DB. (See ADJUSTMENT.) Correct developer conveying mechanism.
	5	DB is plugged with caked toner and foreign matter.	YES	Remove foreign matter. Change developer.

**(10) Smear on back**

Section	Step	Check	Result	Action
Engine	1	Suction Belts are dirty.	YES	Clean.
	2	Image Transfer Corona is dirty.	YES	Clean.
	3	Image Transfer Guide Plate is dirty.	NO	Clean.
	4	Pre-Fusing Guide Plate is dirty.	YES	Clean.
	5	Fusing Rollers are dirty.	YES	Clean or change.
	6	Toner spilled over area inside copier.	YES	Clean.

**(11) Uneven image density**

Section	Step	Check	Result	Action
Engine	1	PC Drum is properly grounded.	NO	Clean or change PC Drum ground plate.
	2	Comb Electrode and grid mesh are dirty or deteriorated.	YES	Clean or change.
	3	Image Transfer Corona is dirty or deteriorated.	YES	Change.
	4	Toner is even on Sleeve/Magnet Roller.	NO	Adjust DB. (See ADJUST-MENT.) Correct developer conveying mechanism.
IR	1	Mirrors and lens are dirty.	YES	Clean.
	2	Exposure Lamp is dirty or deteriorated.	YES	Clean or change.

**(12) Gradation reproduction failure**

Section	Step	Check	Result	Action
Engine	1	Wiring between PH Unit and Image Processing Board is connected.	YES	Change PH Unit. Change Image Processing Board.
IR	1	Shading sheet is dirty.	YES	Clean.
	2	Wiring between CCD Assy and Image Processing Board is connected.	YES	Change CCD Assy. Change Image Processing Board.
			NO	Connect.

**(13) Rough image**

Section	Step	Check	Result	Action
Engine	1	Foreign matter and caked toner inside Developing Unit and DB.	YES	Remove foreign matter and caked toner. Change developer.
	2	Image Transfer Corona wire is dirty or deteriorated.	YES	Clean or change.
	3	Wiring between HV and Image Transfer Corona is connected.	YES NO	Change HV. Connect.
IR	1	Wiring between CCD Assy and Image Processing Board is connected.	YES NO	Change CCD Assy. Change Image Processing Board. Connect.

**(14) Traces of PC Drum Paper Separator Fingers**

Section	Step	Check	Result	Action
Engine	1	Traces come from PC Drum Paper Separator Fingers.	YES	Adjust Paper Separator Corona output: Change the value to one 3 to 5 steps greater than the current setting. (See the adjustment procedure given below.)

**(15) Void areas along leading edge**

Section	Step	Check	Result	Action
Engine	1	Image density along the leading edge is low.	YES	Adjust Paper Separator Corona output: Change the value to one 3 to 5 steps greater than the current setting. (See the adjustment procedure given below.)

**<Paper Separator Corona Output Adjustment Procedure>**

1. Press the Utility key.
2. Touch Meter Count.
3. Press the following keys in this order: Stop → 0 → 0 → Stop → 0 → 1.
4. Select Tech. Rep. Mode.
5. Press the following keys in this order: Stop → Start.
6. Select "Printer" of the Adjust mode.
7. Select "Separator Charge."
8. Select "1-side" or "2-side."
9. Press the Clear key and enter a value from the 10-Key Pad.
10. Use the Access key to change the + or - sign.
11. After the setting has been made, go back to the Basic screen.

## **6. RESETTING THE MAINTENANCE CODE DISPLAY**

### **6-1. Details of Maintenance Codes**

Code	Description
M2	The count of "Waste Toner" of the Consumables counter reaches a predetermined value before the setting value.
M3	The count of "Web" of the Consumables counter reaches the setting value.

### **6-2. Resetting the Maintenance Code Display**

#### **(1) Entering the Tech. Rep. Mode**

<Procedure>

1. Press the Utility key.
2. Touch Meter Count.
3. Press the following keys in this order: Stop → 0 → 0 → Stop → 0 → 1.
4. Select Tech. Rep. Mode.

#### **(2) Resetting the Maintenance Code Display**

- M2: Waste Toner

<Resetting procedure>

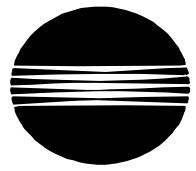
1. Enter the Tech. Rep. mode.
2. Select "Counter."
3. Select "Consumables."
4. Select the count of Waste Toner.
5. Press the Clear key.

- M3: Web

<Resetting procedure>

1. Enter the Tech. Rep. mode.
2. Select "Counter."
3. Select "Consumables."
4. Select the count of Web.
5. Press the Clear key.





MINOLTA

# Service Manual

The essentials of Imaging

**Di470  
[General]**

**The Option product used with Di470 is common with Di450/Di550.**

**Please refer to Di450/Di550 Option Service Manual for Service Manual  
of the Di470 Option product.**

# **INDEX (GENERAL)**

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**GENERAL**

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**MECHANICAL/ELECTRICAL**

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# GENERAL

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# 1. SPECIFICATION

TYPE	: Console
ORIGINAL SCANNING SYSTEM	: Lens Reduction Type CCD Line Sensor
PHOTOCOCONDUCTOR	: Organic Photoconductor
COPYING SYSTEM	: Electrostatic Dry Powdered Image Transfer to Plain Paper
RESOLUTION	: 600 dpi × 600 dpi
PAPER FEEDING SYSTEM	: 4-Way system (for U.S.A) Multi Bypass Table: 50 sheets of paper 1st Drawer (Universal): 550 sheets of paper 2nd Drawer (Universal): 550 sheets of paper 3rd Drawer: 2600 sheets of paper 4-Way system (for other) Multi Bypass Table: 50 sheets of paper 1st Drawer (Universal): 500 sheets of paper 2nd Drawer (Universal): 500 sheets of paper 3rd Drawer: 2500 sheets of paper 5-Way system (for U.S.A) Multi Bypass Table: 50 sheets of paper 1st Drawer (Universal): 550 sheets of paper 2nd Drawer (Universal): 550 sheets of paper 3rd Drawer: 550 sheets of paper 4th Drawer: 550 sheets of paper 5-Way system (for other) Multi Bypass Table: 50 sheets of paper 1st Drawer (Universal): 500 sheets of paper 2nd Drawer (Universal): 500 sheets of paper 3rd Drawer: 500 sheets of paper 4th Drawer: 500 sheets of paper
EXPOSURE SYSTEM	: Mirror Scanning, Slit Exposure
DEVELOPING SYSTEM	: New Micro-Toning System
CHARGING SYSTEM	: Comb Electrode DC Negative Corona with Scrotron System
IMAGE TRANSFER SYSTEM	: Visible Image Transfer by means of a Single-Wire DC Negative Corona with Corotron System
PAPER SEPARATING SYSTEM	: AC Corona with Corotron System, plus Paper Separator Finger
FUSING SYSTEM	: Heat Roller
PAPER DISCHARGING SYSTEM	: Charge Neutralizing Brush
MAXIMUM ORIGINAL SIZE	: Metric-A3L; Inch-11 × 17 L (L: Lengthwise)



COPY MEDIUM: Permissible -: Not permissible C: Crosswise

Paper Source		1st to 2nd Drawer	4WAY (LCC)	5WAY (3rd to 4th)	Multi Bypass Table	Duplex
Medium	Plain paper (60 to 90 g/m <sup>2</sup> )	○	○	○	○	○
	Translucent paper	-	-	-	○ *1	-
	Transparencies	-	-	-	○ *1	-
	Thick paper (90 to 157 g/m <sup>2</sup> )	-	-	-	○ *1	-
	Recycled paper	○	○	○	○ *1	○
Dimensions	Maximum (Width × Length)	297 × 432 mm	A4C	297 × 432 mm 11-3/4 × 17 Inch	297 × 432 mm 11-3/4 × 17 Inch	297 × 432 mm
	Minimum (Width × Length)	140 × 182 mm	8-1/2 × 11 C Inch	210 × 280 mm	100 × 140 mm 4 × 5-3/4 Inch	140 × 182 mm

\*1: 20 sheets or less

MULTIPLE COPIES

: 1 to 999

WARMING-UP TIME

: 99 seconds or less

FIRST COPY TIME

: A4C / LetterC: 4.0 second or less  
(in Full size Mode using 1st Drawer)

CONTINUOUS COPY SPEED (copies/minute) Fed from 1st Drawer/Memory Mode:

47 Piece Copy Machine

Area	Zoom Ratio Size	×1.000
Metric	A3L	28
	A4L	36
	A4C	47
	B4L	32

Area	Zoom Ratio Size	×1.000
Inch	11 × 17 (L)	28
	8-1/2 × 14 (L)	32
	8-1/2 × 11 (L)	38
	8-1/2 × 11 (C)	47

L: Lengthwise; C: Crosswise

## ZOOM RATIOS

	Area Mode	Metric	Inch
	Full Size	×1.000	×1.000
Fixed	Reduction	×0.816	×0.785
		×0.707	×0.733
		×0.500	×0.647
	Enlargement	×1.154 ×1.414 ×2.000	×0.500 ×1.214 ×1.294 ×1.545 ×2.000
Variable	25 % to 400 % (in 0.1 % increments)		



**LENS** : Through Lens ( $F = 4.0, f = 62 \text{ mm}$ )  
**EXPOSURE LAMP** : Rare Gas Fluorescent Light (20 W)  
**FUSING TEMPERATURE** : 190 °C

## MAX. POWER CONSUMPTION (Copier only)

Voltage	Exposure Heater Lamp (Rating)	Fusing Heater Lamp (Rating)	Max. Power Consumption (Full System)	In Standby
115 V 120 V	24 V 20 W	120 V Upper: 850 W Sub: 400 W Lower: 200 W	1430 W ± 10 %	1230 W ± 10 %
220 V 240 V		230 V Upper: 1011 W Sub: 400 W Lower: 400 W	1700 W ± 10 %	1380 W ± 10 %

**POWER REQUIREMENTS** : 120 V, 127 V, 220-240 V; 50/60 Hz

## ENVIRONMENTAL CONDITIONS

**COPIER DIMENSIONS** : Width .... 664 mm (26-1/4 inch)  
 Depth .... 768 mm (30-1/4 inch)  
 Height ... 1032 mm (40-3/4 inch) With Cabinet  
**COPIER WEIGHT** : 158.5 (Copier: 113, Cabinet: 45.5)  
 \* Excluding the Copy Tray, Starter, Toner, and Paper

## **2. PRECAUTIONS FOR INSTALLATION**

### **2-1. Installation Site**

To ensure safety and utmost performance of the copier, the copier should NOT be used in a place:

- Where it will be subjected to extremely high or low temperature or humidity.
- Where it will be subjected to sudden fluctuations in either temperature or humidity.
- Which is exposed to direct sunlight.
- Which is in the direct air stream of an air conditioner, heater, or ventilator.
- Which has poor ventilation or is dusty.
- Which does not have a stable, level floor or where it will receive undue vibration.
- Which is near any kind of heating device.
- Which is near volatile flammables (thinner, gasoline, etc.).
- Where it may be splashed with water.
- Which puts the operator in the direct stream of exhaust from the copier.
- Where ammonia gas might be generated.

### **2-2. Power Source**

- If any other electrical equipment is sourced from the same power outlet, make sure that the capacity of the outlet is not exceeded.
  - Use a power source with little voltage fluctuation.
  - Never connect by means of a multiple socket any other appliances or machines to the outlet being used for the copier.
  - Ensure that the copier does not ride on the power cord or communication cable of other electrical equipment, and that it does not become wedged into or underneath the mechanism.
  - Make the following checks at frequent intervals:
    - \* Is the power plug abnormally hot?
    - \* Are there any cracks or scrapes in the cord?
    - \* Has the power plug been inserted fully into the outlet?
    - \* Does something, including the copier itself, ride on the power cord?
- Use an outlet with a capacity of 115/120 V, 15 A or more. 200-220 V, 20 A or more.*

### **2-3. Grounding**

- Always ground the copier to prevent receiving electrical shocks in the case of electrical leakage.
- Connect the ground wire to the ground terminal of the outlet or a grounding contact which complies with the local electrical standards.
- Never connect the ground wire to a gas pipe, the ground wire for a telephone, lightning arrester, or a water pipe for fear of fire and electrical shock.

### **3. PRECAUTIONS FOR USE**

#### **3-1. To ensure that the copier is used in an optimum condition**

- Never place a heavy object on the copier or subject the copier to shocks.
- Insert the power plug all the way into the outlet.
- Do not attempt to remove any panel or cover which is secured while the copier is making copies.
- Do not turn OFF the copier while it is making copies.
- Provide good ventilation when making a large number of copies continuously.
- Never use flammable sprays near the copier.
- If the copier becomes inordinately hot or produces abnormal noise, turn it OFF and unplug it.
- Do not turn ON the power switch at the same time when you plug the power cord into the outlet.
- When unplugging the power cord, do not pull on the cord; hold the plug and pull it out.
- Do not bring any magnetized object near the copier.
- Do not place a vase or vessel containing water on the copier.
- Be sure to turn OFF the power switch at the end of the workday or upon power failure.
- Use care not to drop paper clips, staples, or other small pieces of metal into the copier.



#### **3-2. Operating Environment**

The operating environmental requirements of the copier are as follows.

- Temperature: 10 to 32 °C
- Humidity: 15 to 85 %
- Rate of temperature change: 10 °C/h
- Rate of humidity change: 10 %/h

#### **3-3. Power Requirements**

The power source voltage requirements are as follows.

- Voltage fluctuation: AC 115, 120, 220, 240 V
  - ± 10 % (copying performance assured)
  - +10 %
  - 15 % (paper feeding performance assured)
- Frequency fluctuation: 50/60 Hz ± 0.3 Hz

#### **3-4. Note**

- It is prohibited to copy paper and hard currencies, government securities, and municipal bonds (even when they are stamped as "Sample").
- For fear of infringement of copyright, it is also prohibited to copy copyrighted works, including books, music, works of art, maps, drawings, motion pictures, and photos except when the copy is to be used only personally.

## **4. HANDLING OF CONSUMABLES**

Before using any consumables, always read the label on its container carefully.

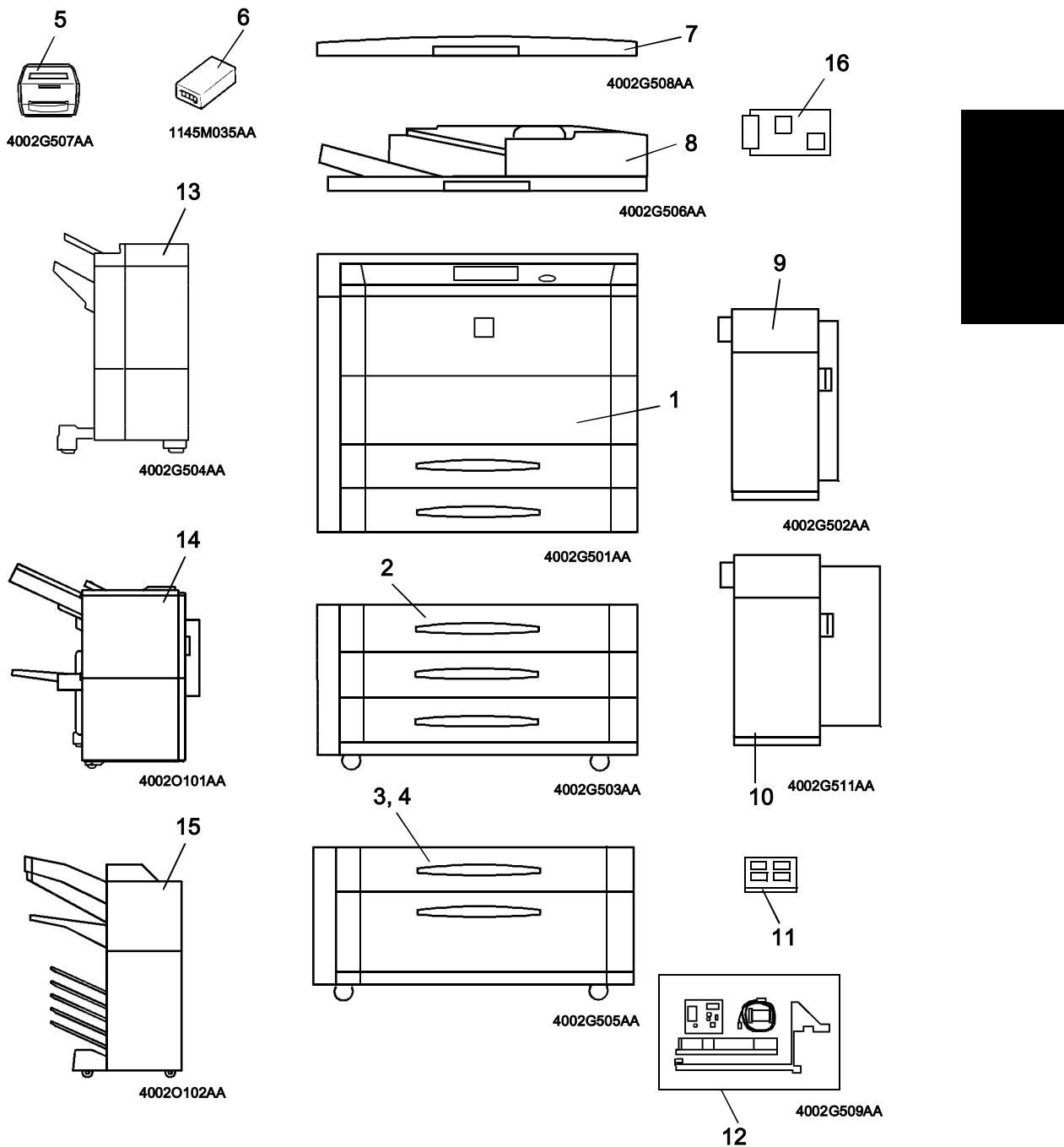
- Paper can be easily damaged by dampness. To prevent absorption of moisture, store paper, which has been removed from its wrapper but not loaded in the drawer, in a sealed plastic bag in a cool, dark place.
- Keep consumables out of the reach of children.
- Do not touch the PC Drum with bare hands.
- The same sized paper is of two kinds, short grain and long grain. Short grain paper should only be fed through the copier crosswise, long grain paper should only be fed lengthwise.
- If your hands become soiled with toner, wash them with soap and water.
- Do not throw away any used consumables (PC Drum, starter, toner, etc.). They are to be collected.
- Do not burn, bury in the ground, or throw into the water any consumables (PC Drum, starter, toner, etc.).
- Do not store consumables in a place which:
  - \* Is hot and humid.
  - \* Is subject to direct sunlight.
  - \* Has an open flame nearby.

## **5. OTHER PRECAUTIONS**

Use the following precautions when performing service jobs for a copier that uses a laser.

- When a service job needs to be performed in the laser beam path, such as when working around the printerhead or PC Drum, be sure first to unplug the power cord of the copier from the outlet.
  - If the job requires that the power cord be left plugged in, observe the following precautions.
  - Take off your watch, ring and any other reflective object and wear laser protective goggles.
  - Keep users away from the job site.
1. Do not bring a highly reflective tool into the laser beam path during the service job.

## 6. SYSTEM OPTIONS



1. Copier
2. 2 Way Paper Feed Cabinet PF-208
3. Large Capacity Cassette PF-115
4. Duplexing Paper Feed Cabinet PF-7D
5. Data Controller D-103
6. Plug-In Counter
7. Electronic Document Handler EDH-3
8. Original Cover OC-1
9. Large Capacity Cassette C-306
10. Large Capacity Cassette C-306L
11. 32 MB Memory M32-2
12. Hard Disk Drive Kit HDD-1
13. Finisher FN-105, FN106
14. Finisher FN-5
15. Mailbin Finisher FN-503
16. Data Terminal DT-105 (MC Only)

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# **MECHANICAL/ ELECTRICAL**

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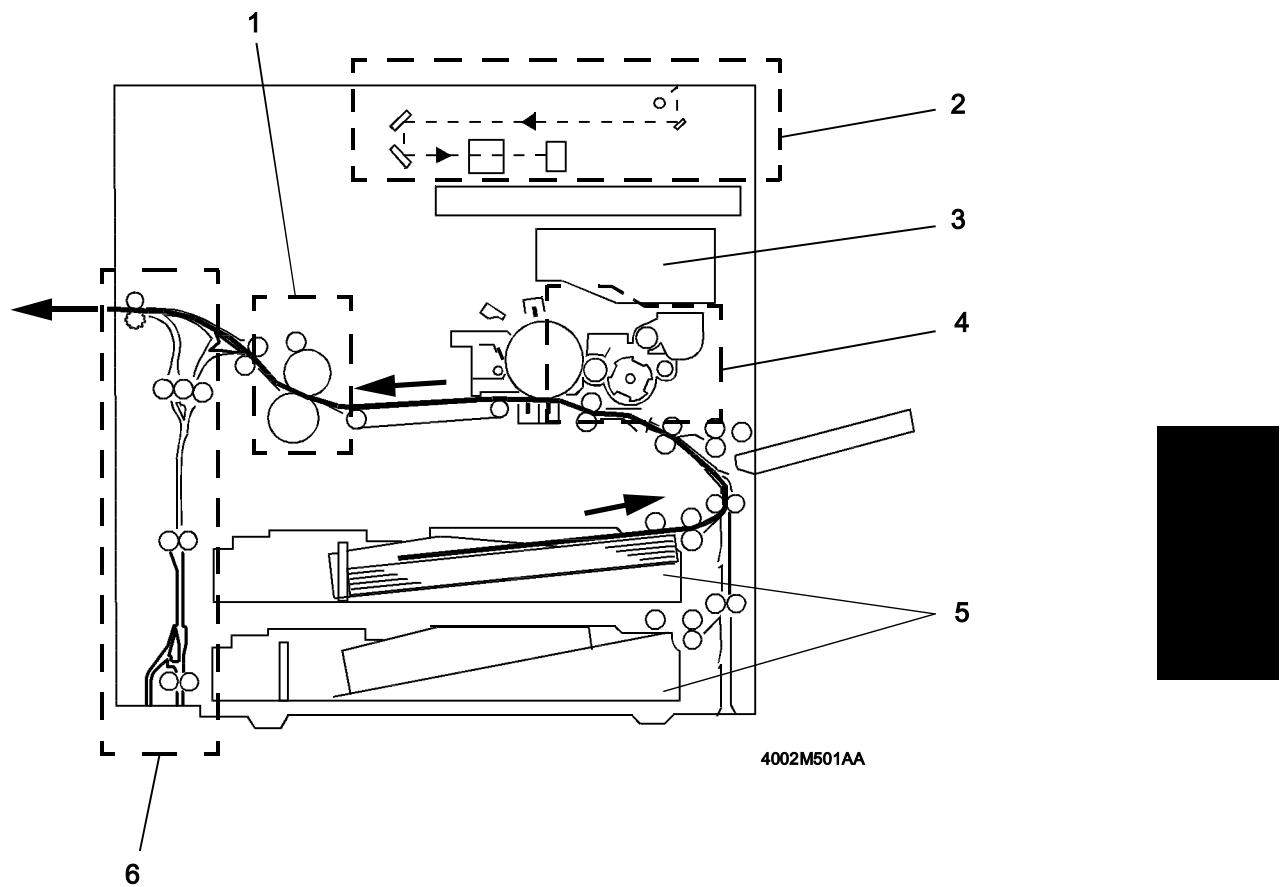


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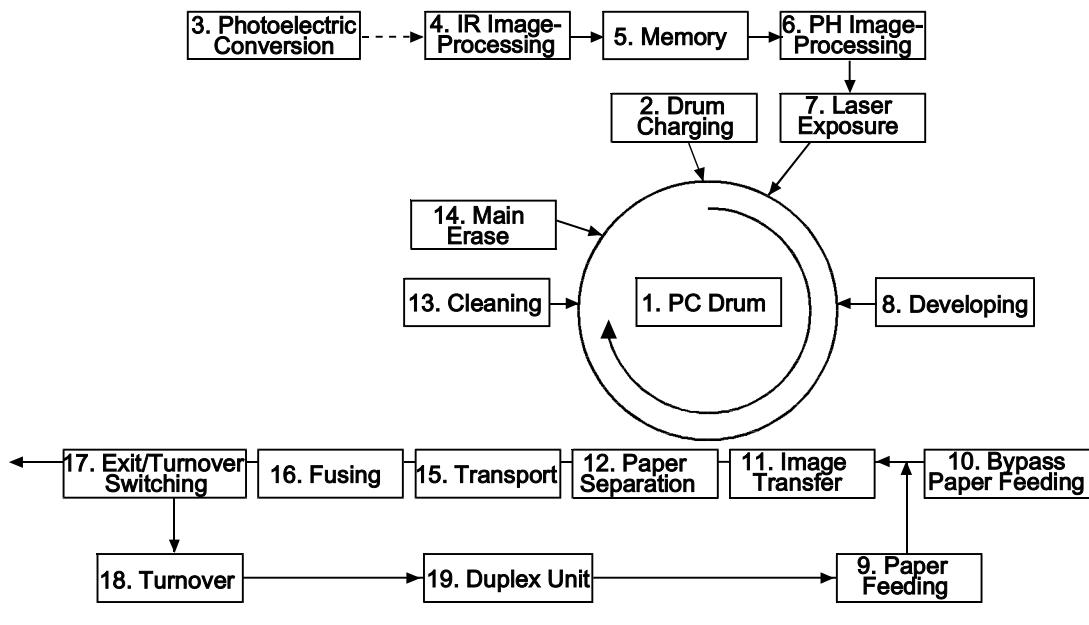
## 1. CROSS SECTIONAL VIEW



1. Fusing Section  
2. IR Section  
3. PH Section

4. Developing Section  
5. Paper Tray  
6. Exit/Turnover Section

## 2. COPY PROCESS



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### 1. PC Drum

- Used as the medium on which a visible developed image of the original is formed.

### 2. Drum Charging

- A uniform negative DC charge is deposited across the entire surface of the PC Drum.

### 3. Photoelectric Conversion

- CCD converts the image data represented by light reflected off the original to a corresponding electrical signal which, in turn, is output to IR image-processing section.

### 4. IR Image-Processing

- The electrical signal is converted to an 8-bit digital image signal (A/D conversion) which, in turn, goes through appropriate correction before being output to the memory.

### 5. Memory

- The digital image signal is compressed and stored in memory. It is then output to the PH image-processing section.

### 6. PH Image Processing

- After going through corrections, the digital image signal is converted to a corresponding electrical signal (D/A conversion) that controls the intensity of the light from the laser diode.

### 7. Laser Exposure

- The laser beam strikes the surface of the PC Drum, forming an electrostatic latent image.

### 8. Developing

- Toner negatively charged in the Developer Mixing Chamber is attracted onto the electrostatic latent image changing it to a visible, developed image.
- An AC/DC negative bias voltage is applied to the Sleeve/Magnet Roller to prevent toner from being attracted onto those areas of the PC Drum which correspond to the background areas of the original.

### 9. Paper Feeding

- Paper is fed from the drawer.

**10. Bypass Paper Feeding**

- Paper is fed from the Bypass Table.

**11. Image Transfer**

- A DC positive corona emission is applied to the back side of the paper, thereby attracting toner onto the surface of the paper.

**12. Paper Separation**

- An AC corona and a DC negative corona emission is applied to the back side of the paper to neutralize the paper, while the PC Drum Paper Separator Fingers mechanically remove the paper from the surface of the PC Drum.

**13. Cleaning**

- Residual toner on the surface of the PC Drum is scraped off.

**14. Main Erase**

- Light is directed to the surface of the PC Drum to neutralize any surface potential remaining there after cleaning.

**15. Transport**

- The paper is fed to the Fusing Unit.

**16. Fusing**

- The developed image is permanently fused to the paper by a combination of heat and pressure applied by the Upper and Lower Fusing Rollers.

**17. Exit/Turnover Switching**

- The paper is either fed out onto the Exit Tray or into the turnover mechanism.

**18. Turnover**

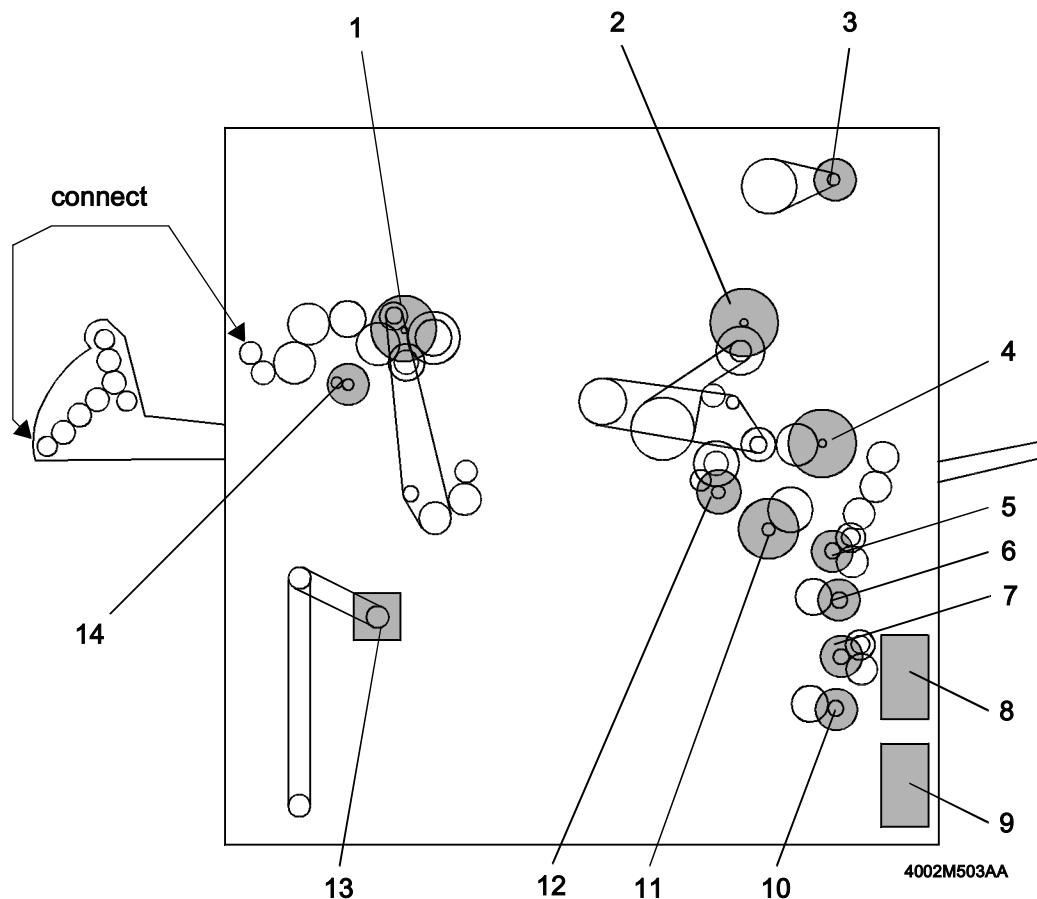
- The 1-sided copy is turned over and fed into the Duplex Unit.

**19. Duplex Unit**

- The 1-sided copies are fed through this unit before being subjected to the second copy cycle.

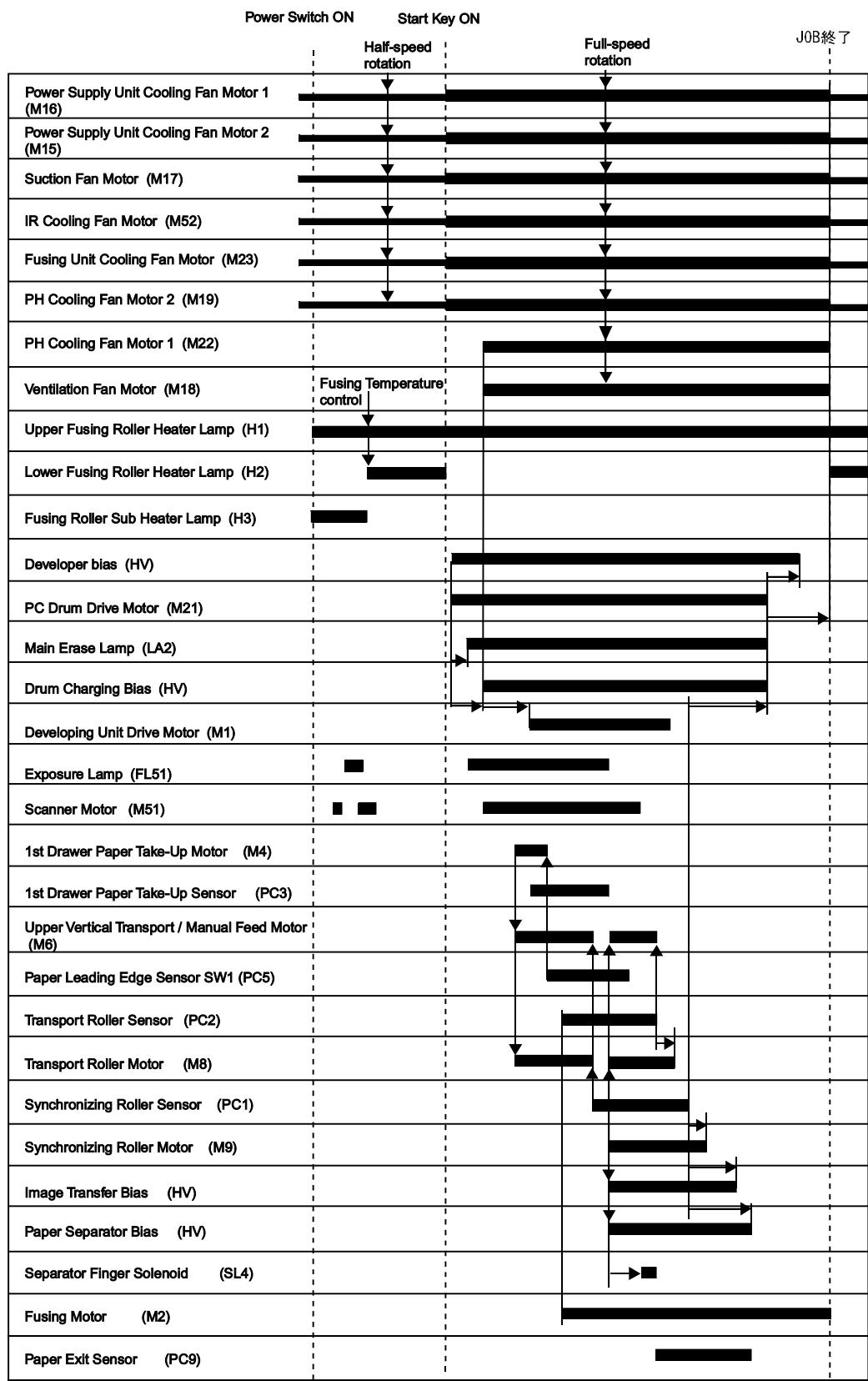


### 3. DRIVE SYSTEM



- 1. Fusing Motor (M2)
- 2. PC Drum Drive Motor (M21)
- 3. Scanner Motor (M51)
- 4. Developing Unit Drive Motor (M1)
- 5. Upper Vertical Transport / Manual Feed Motor (M6)
- 6. 1st Drawer Paper Take-Up Motor (M4)
- 7. Lower Vertical Transport Motor (M7)
- 8. 1st Drawer Lift-Up Motor (M11)
- 9. 2nd Drawer Lift-Up Motor (M12)
- 10. 2nd Drawer Paper Take-Up Motor (M5)
- 11. Transport Roller Motor (M8)
- 12. Synchronizing Roller Motor (M9)
- 13. Turnover Motor (M10)
- 14. Cleaning Web Drive Motor (M24)

## 4. SEQUENTIAL EXPLANATION

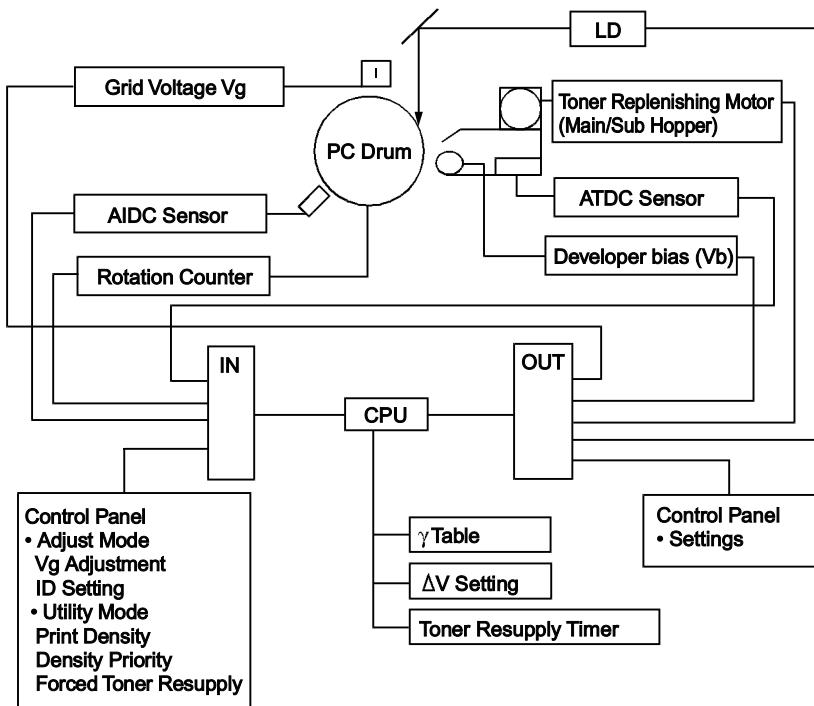


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## 5. IMAGE STABILIZATION SYSTEM

The following image stabilization controls are provided to ensure stabilized copy image.

Item	Purpose	Method
Initial Setup	First correct for AIDC sensor disparity and contamination. Then use $\Delta V$ control to set initial values for grid voltage ( $V_g$ ) and developer bias ( $V_b$ ).	Set initial values for grid voltage ( $V_g$ ) and developer bias ( $V_b$ ).
Short-Term Correction	Correct for ID drop caused by change in drum sensitivity.	Perform $\Delta V$ control after every 100 copies.
Long-Term Correction	Correct for drop in surface potential (surface fogging) caused by drum deterioration.	Correct $V_g$ based on cumulative hours of drum rotation.
Morning Correction (first run each morning)	Correct for ID drop caused by low drum sensitivity when copier is first power switch is turned ON (before copier is fully warmed up).	AIDC sensor contamination, use $\Delta V$ control to correct the grid voltage ( $V_g$ ) and developer bias ( $V_b$ ).
Correction After Prolonged Non-Use	Correct for ID change caused by change in drum sensitivity due to non-usage for at least two hours in the standby state.	When START key is pressed, use $\Delta V$ control to correct $V_g$ and $V_b$ before making the copy.
T/C Correction	Maintain the developing unit's T/C ratio at a constant level.	Use ATDC to control the toner resupply

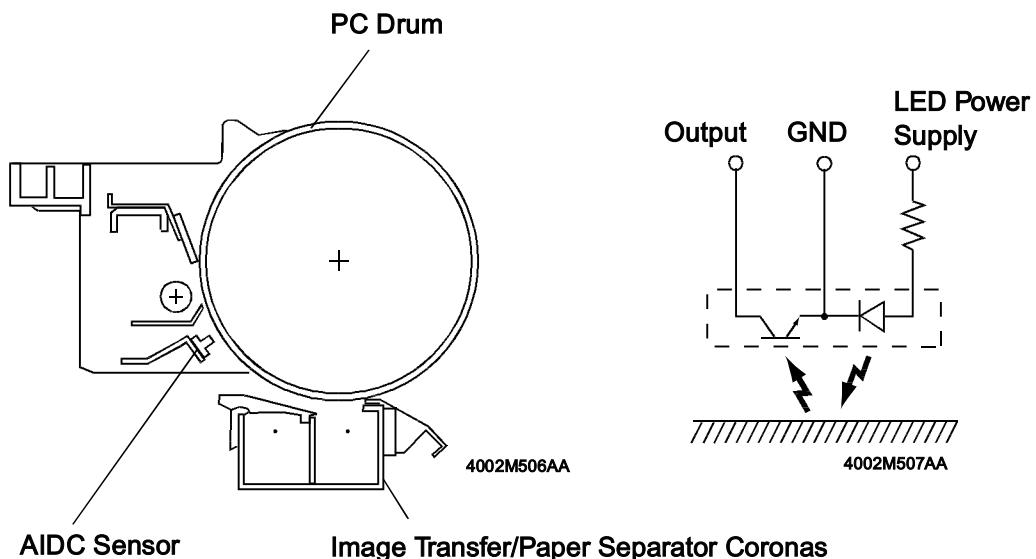


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## 5-1. AIDC Sensor

The AIDC Sensor is used to detect the toner density and background level on the PC Drum.

1. An LED projects infrared light onto the surface of the PC Drum.
2. A phototransistor detects the intensity of infrared light reflected off the surface of the PC Drum.
3. The phototransistor outputs a voltage corresponding to the intensity of the light reflected back.



Toner Density on PC Drum	Light reflected	Output Voltage
High	Small	High
Low	Large	Low

## **5-2. Image Stabilization System Control**

### **1. AIDC Sensor Coarse Adjustment**

- The following adjustment is made to prevent the AIDC Sensor output voltage from deviating from the specified range due to part-to-part variations in the AIDC Sensor (installation, circuit, deterioration, etc.).
- The load resistance value is set with the 4-bit analog switch so that the AIDC Sensor output voltage becomes approximately 1 volt in terms of the background level to be erased.

### **2. AIDC Sensor Fine Adjustment**

- The following adjustment is made to prevent the AIDC Sensor output voltage from being varied by toner or other contamination of the sensor.
- The LED current value of the AIDC Sensor is varied so that the AIDC Sensor output voltage becomes 1 volt in terms of the background level to be erased.

CONTROLLED PART	CONTROL SIGNAL	WIRING DIAGRAM
AIDC Sensor	PWB-A PJ7A-7B	4-D

### **3. $\Delta V$ Control**

- Drum deterioration and environmental factors may lead to a drop in drum sensitivity and drum surface potential, resulting in ID loss.
- To correct for this, grid voltage ( $V_g$ ) and bias voltage ( $V_b$ ) are adjusted to bring the AIDC sensor output voltage into the range between 4.40 V (lighter) to 4.45 V (darker).

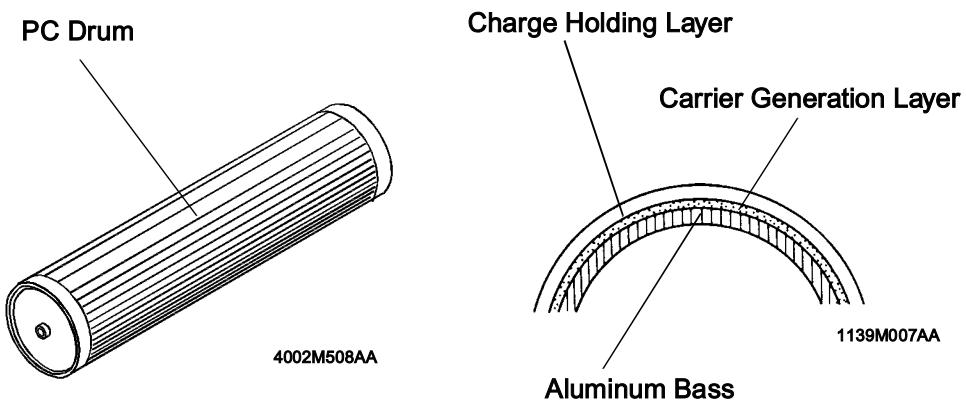
### **4. Grid Voltage Control ( $V_g$ )**

- This control corrects for a loss in drum surface potential caused by drum deterioration (loss of surface material). Correction is made by increasing the  $V_g$  by 1 step after 50 hours of drum rotation.

CONTROL	CONTROL VALUE	INITIAL VALUE
Grid voltage	-366 V to -924 V	-600 V

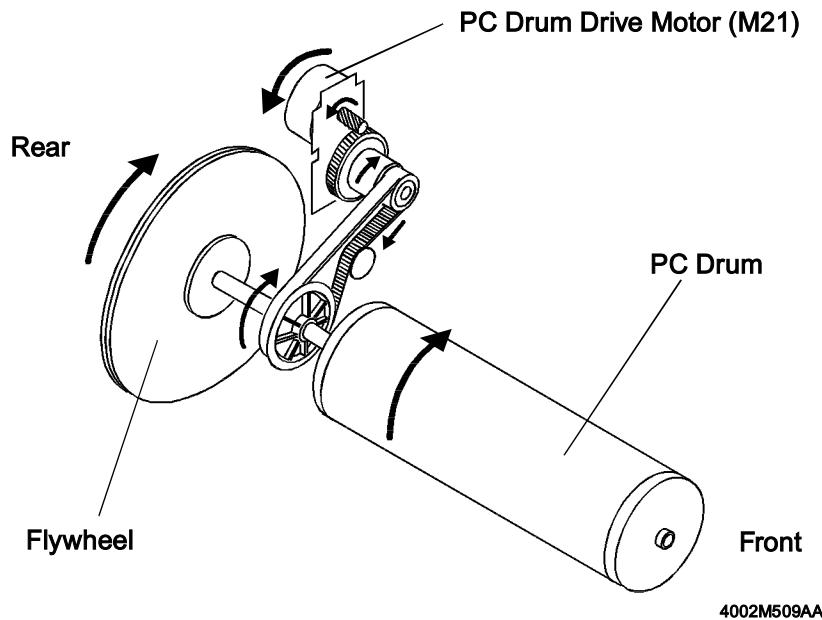
## 6. PC DRUM SECTION

The PC Drum consists of layers of semiconductive materials placed on an aluminum alloy base, on which an electrostatic latent image is formed.



### 6-1. PC Drum Drive Mechanism

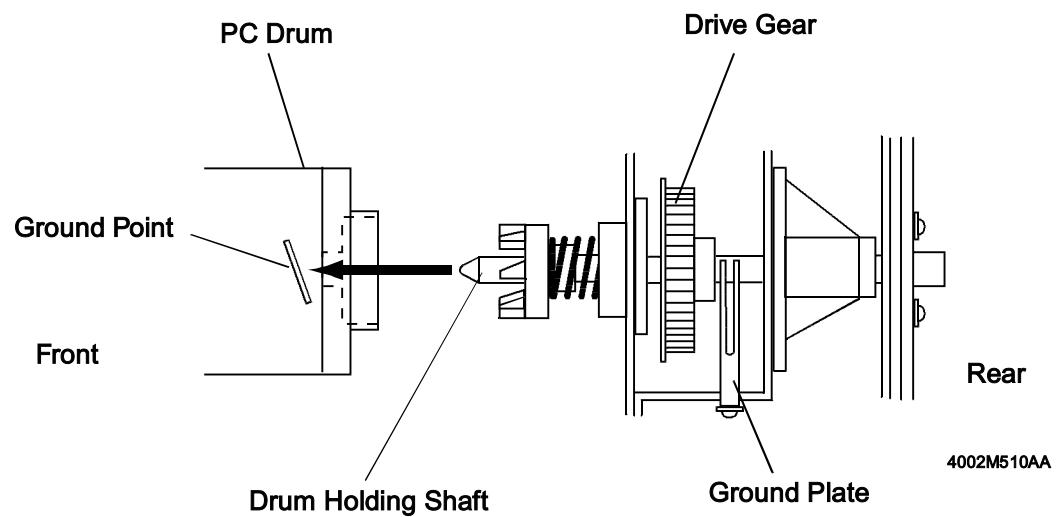
- The PC Drum is rotated by drive from a motor.
- The flywheel mounted on the drum shaft functions to smooth out power surges occurring due to backlash in gears.



CONTROLLED PART	CONTROL SIGNAL	ON	OFF	WIRING DIAGRAM
M21	PWB-A PJ7A-3A	L	H	4-C

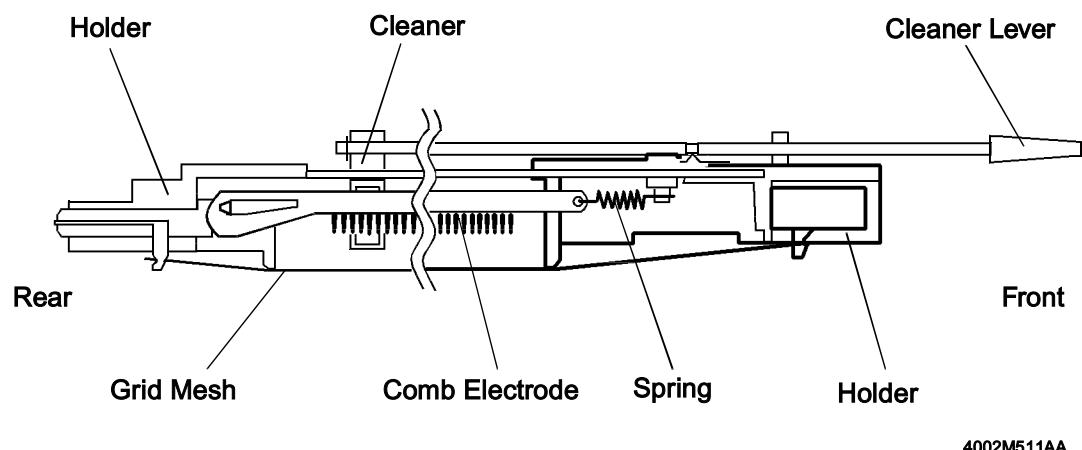
## 6-2. Grounding of the PC Drum

The potential on the surface of the PC Drum exposed to the light is grounded to the frame.



## 7. PC DRUM CHARGING SECTION

- The PC Drum Charge Corona has a scorotron grid to deposit a charge evenly across the surface of the PC Drum.
- The corona unit has a comb electrode that discharges only toward the grid mesh, thus minimizing the amount of ozone produced.
- The grid voltage applied to the grid mesh is varied to select between the Normal and Photo mode.

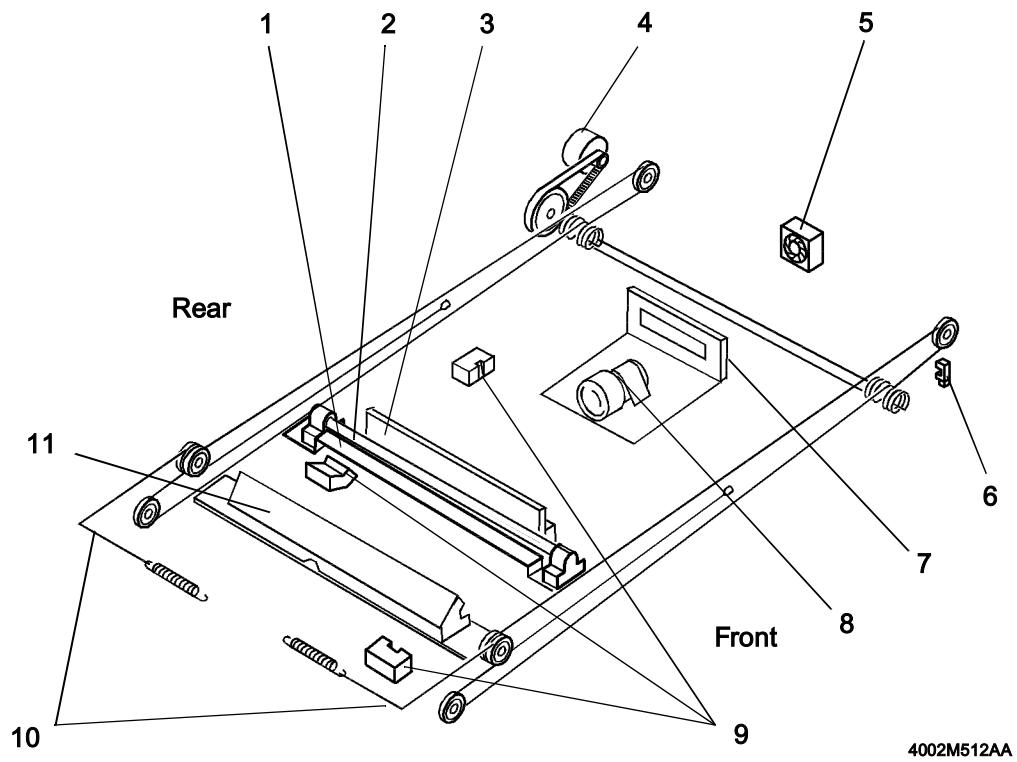


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	CONTROL SIGNAL	ON	OFF	WIRING DIAGRAM
PC Drum Charger	PWB-A PJ12A-9B	L	H	5-F

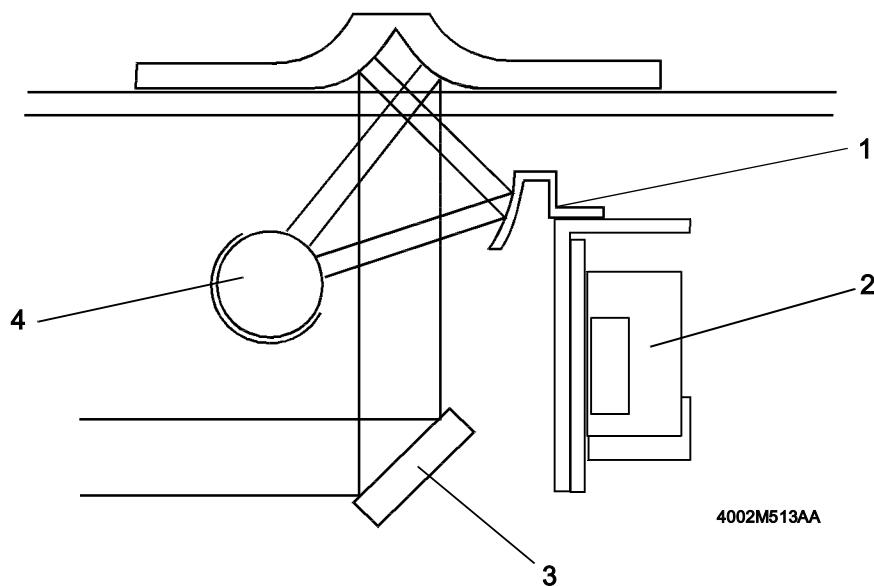
## 8. IMAGE READING SECTION

Light is projected onto the surface of the original and the light reflected off the original is converted to a corresponding electrical signal.



- |  |                                   |
|--|-----------------------------------|
| 1. Scanner                                     | 7. CCD Board (PWB-IA)             |
| 2. Exposure Lamp (FL51)                        | 8. Lens                           |
| 3. Inverter                                    | 9. Original Size Detecting Sensor |
| 4. Scanner Motor (M51)                         | 10. Scanner Drive Cable           |
| 5. IR Cooling Fan Motor (M52)                  | 11. 2nd/3rd Mirror Carriage       |
| 6. Scanner Reference Position Sensor<br>(PC51) |                                   |

## 8-1. Exposure Components Section



### 1. Auxiliary Reflector:

Reflects light onto the areas that the Exposure Lamp cannot illuminate when an original does not lie flat on the Original Glass (such as a book). It reduces shadows that would otherwise be transferred to the copy.

### 2. Inverter:

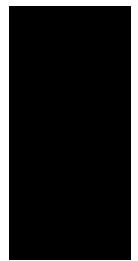
Changes DC into AC to turn ON the Exposure Lamp.

### 3. Mirror #1:

Directs the reflected light from the original over to Mirror #2.

### 4. Exposure Lamp:

A fluorescent lamp is used to illuminate the original.



## **8-2. Exposure Lamp Control**

Control to turn ON and OFF the Exposure Lamp is provided by an Exposure Lamp Remote signal output from PWB-B

\* Operation when Power Switch is switched ON

1. The Scanner moves to, and stops at, the shading position.
2. Automatic adjustment of clamp level: Sets the black level when scanning an image.
3. The Exposure Lamp turns ON
4. Automatic adjustment of gain: Sets the maximum white level.
5. The Scanner returns to its home position.
6. The Scanner moves to the shading position to make a shading correction.
7. The Scanner returns to its home position.
8. A black line check is made (only the copier equipped with an EDH). \*1
9. The Exposure Lamp turns OFF.

\*1: Black line check

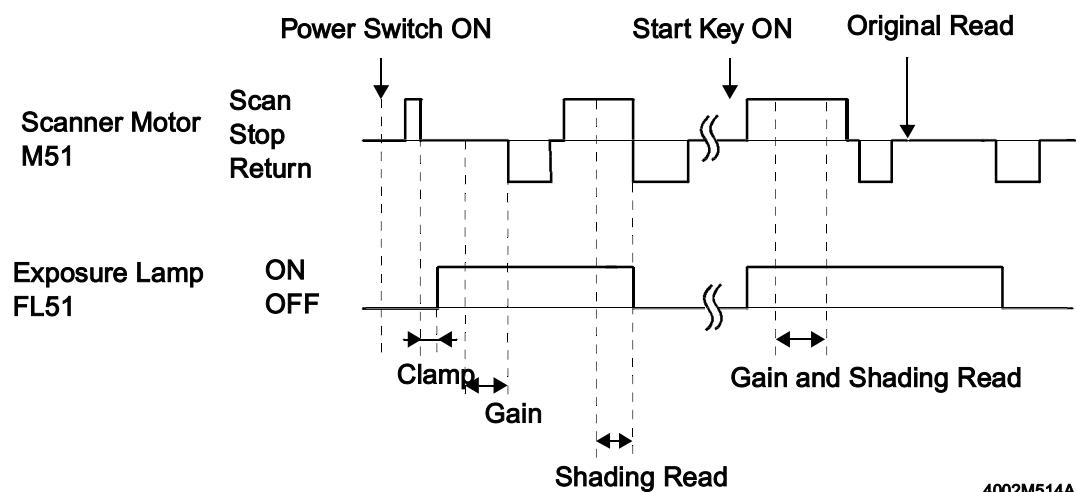
1. Check that the EDH is lowered.
2. The Scanner moves to, and stops at, the shading position.
3. While returning to the home position, the Scanner checks the EDH scanning range for dust and scratches that could cause a black line.
4. If any dust or scratches are found, the copier gives a warning message.

\* Operation when the Start key is pressed (EDH scanning)

1. The Exposure Lamp turns ON
2. The Scanner starts moving to the shading position.
3. A gain adjustment and a shading correction are made at the shading position.
4. The Scanner moves to the original scanning position and starts reading the original.
5. After having read the original, the Scanner moves to the home position.

Clamp level : Sets the black level when scanning an image.

Gain : Sets the maximum white level.

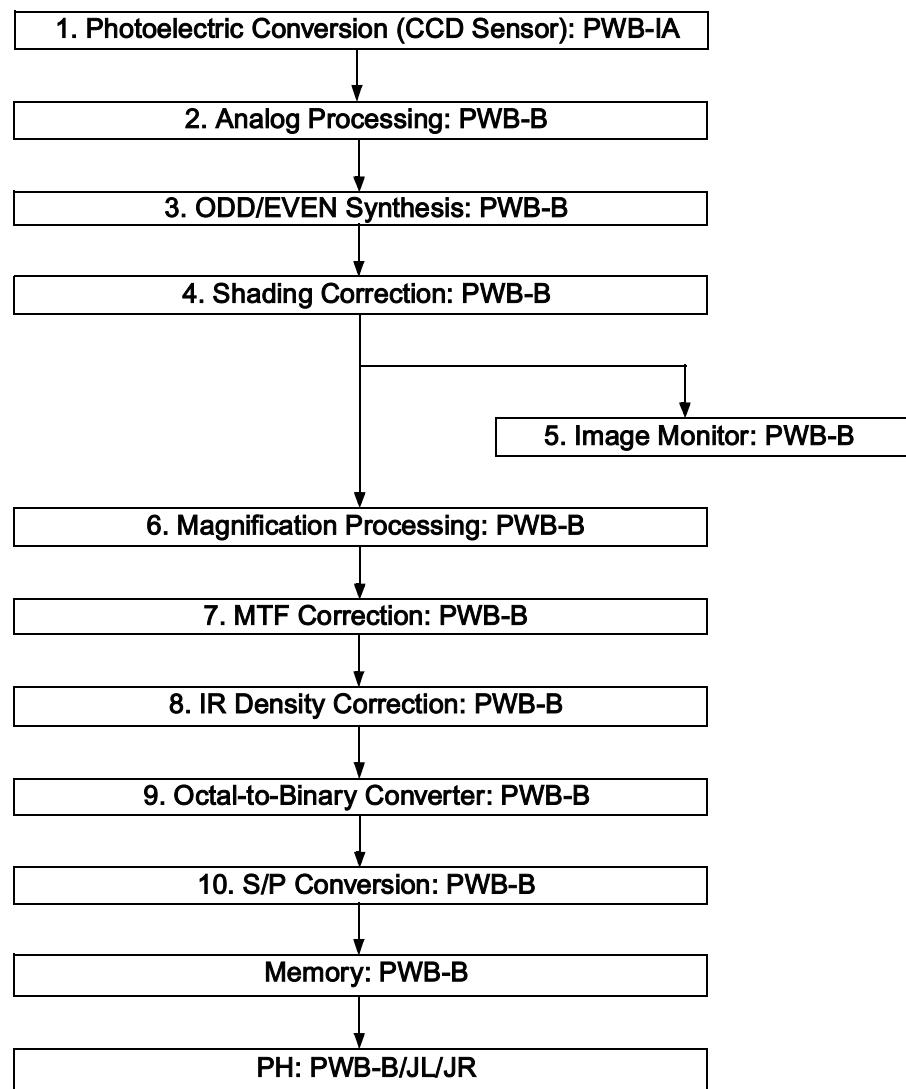


	CONTROL SIGNAL	ON	OFF	WIRING DIAGRAM
M51	PWB-IC PJ3IC-1~3	Pulse Output		10-A

	CONTROL SIGNAL	ON	OFF	WIRING DIAGRAM
FL51	PWB-B PJ5B-1	L	H	17-F

### **8-3. Image Processing Process**

The IR image processing system is composed of the following blocks. These blocks implement various types of corrective processing.



1. Photoelectric Conversion (CCD Sensor): PWB-IA  
Light from the Exposure Lamp reflects off the original, passes through mirrors and one lens, and reaches the CCD sensor. The CCD sensor converts the optical data into analog electrical signals.
2. Analog Processing: PWB-B  
This block eliminates noise from the (ODD and EVEN) analog signals output by the CCD sensor, then converts the result into (ODD and EVEN) 8-bit digital image signals (A/D conversion).
3. ODD/EVEN Synthesis: PWB-B  
This block synthesizes the ODD and EVEN signals received from the preceding block into a single image-data signal.
4. Shading Correction: PWB-B  
Corrects shading error introduced by factors such as sensitivity differentials among CCD sensor pixels, uneven Exposure Lamp light distribution, and uneven lens shading.
5. Image Monitor: PWB-B  
Monitors the image data. Generates a histogram of the image data, for use during EE/gain adjustment.
6. Magnification Processing: PWB-B  
Adjusts the image in accordance with the edit function setting (Enlarge/Reduce) made at the control panel.
7. MTF Correction: PWB-B  
Reduces the image noise contained in the image density data, smooths the image, adds emphasis to borders of characters and lines, and adds sharpness.
8. IR Density Correction: PWB-B  
Corrects the gradation of the image density data, in accordance with the image quality mode and copy density set at the control panel, so as to produce optimal density and image quality.
9. Octal-to-Binary Converter: PWB-B  
Converts image density data from 8-bit data to 1-bit data, using an error-dispersing binarization method.
10. S/P Conversion: PWB-B  
Converts the binarized image-density data into a 4-bit parallel signal, and transmits this signal to the memory section.



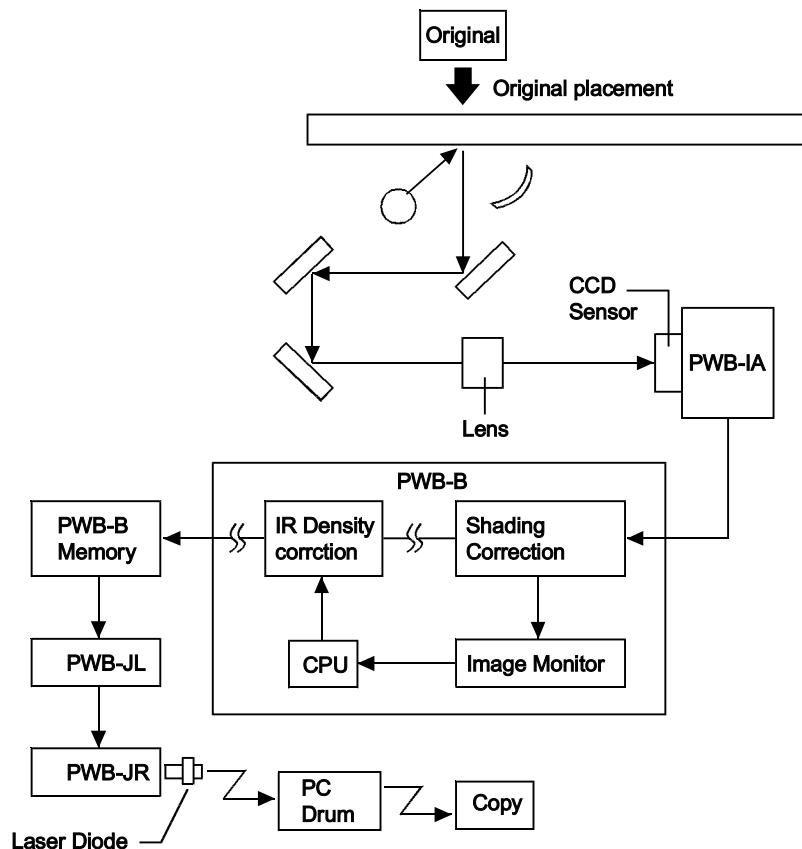
## 8-4. Image Density Control

### (1) Auto Exposure Control

- Auto Exposure Control varies the background removal threshold in accordance with the original type (newspaper, photograph, etc.). This helps ensure that only the fogging component in the low-density areas is removed, while retaining the image density of the characters and other high-density areas of the image.
- The IR Density Correction section uses the sampled image data to determine the type of the original by the following method.

Scanning original fed through EDH : Realtime scanning

Multi Bypass Table : Scanning during prescan motion



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#### \* Setting of the Image Density Level

- The user can select the image density level from among three (Light, Normal, and Dark) by using a User's Choice function.
- The Auto Exposure mode can be used only in the Text mode. While, the Manual Exposure mode can be used in all modes of Text, Text/Photo, and Photo.

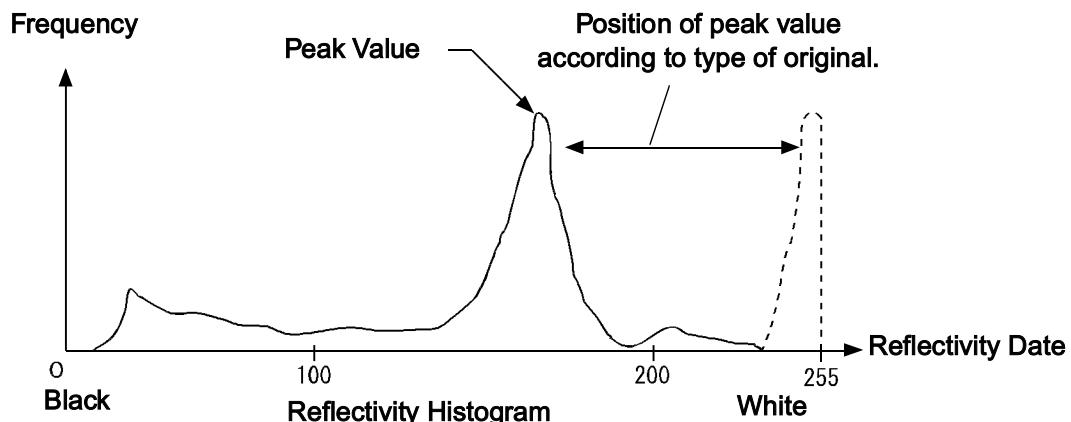
## 1. Scanning Original fed through EDH

### \* Realtime Scanning

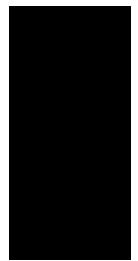
- Realtime scanning is a method in which the image data is sampled during a copy cycle.
- The sampled image data is accumulated in the form of a reflectivity histogram. This histogram is used to determine the type of the original and the background removal threshold is calculated as may be necessary.

### \* Reflectivity and Histogram

- The reflectivity histogram prepared by the CPU of the Auto Exposure Control section is a chart for displaying the distribution of the image data readings.
- The reflectivity distribution varies for different types of originals. This copier uses the peak value (\*1) of this histogram to compute the best possible background removal threshold.



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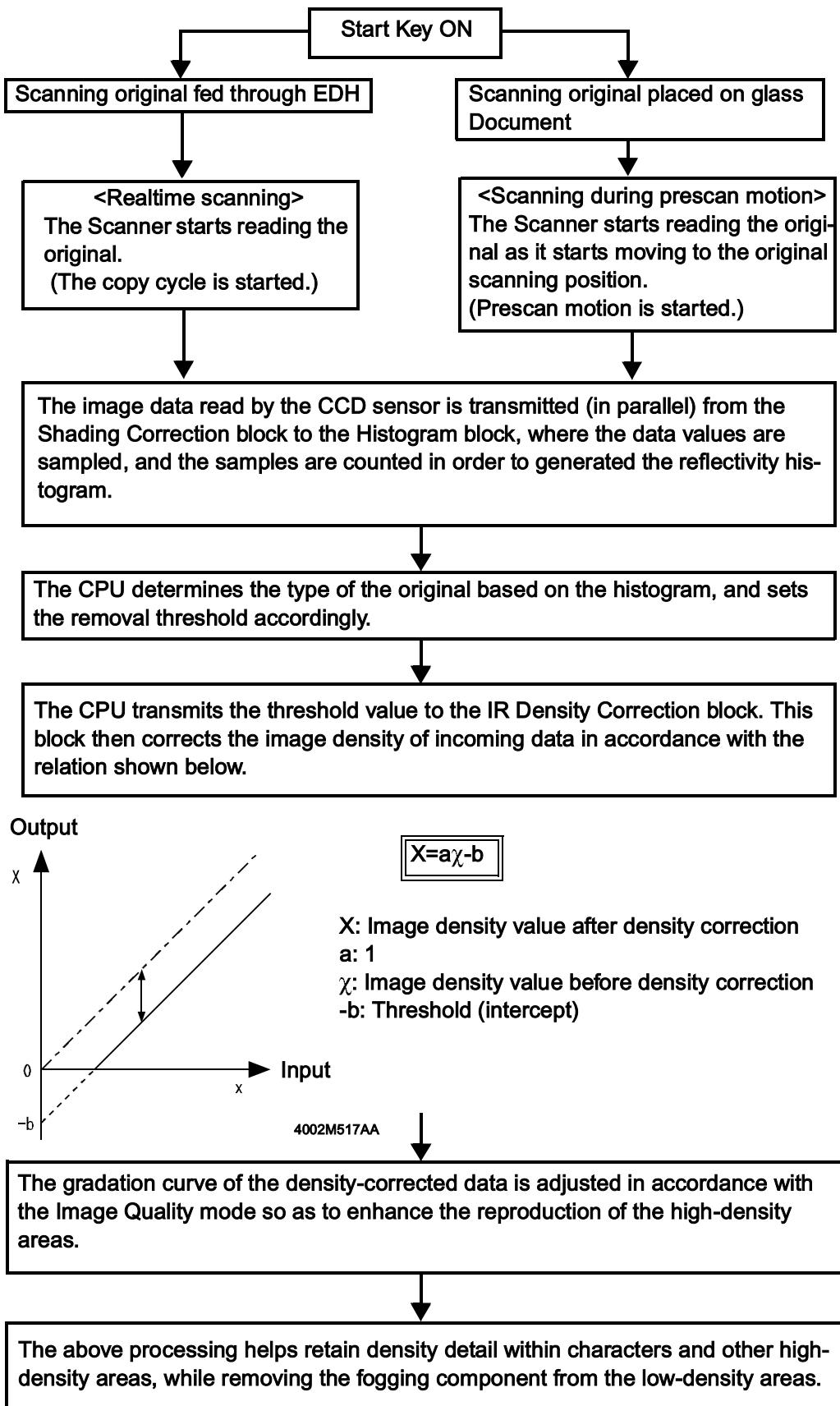
\*1: The peak value represents the density of the original's background. For a two-tone B&W image (such as a word-processor document), where the background is white, the peak would appear all the way to the right, as shown by the dotted line in the above illustration. For a newspaper, which is characterized by a somewhat darker background, the peak would appear at about the position shown by the solid line in the above chart

## 2. Scanning Original Placed on Glass

### \* Scanning during prescan motion

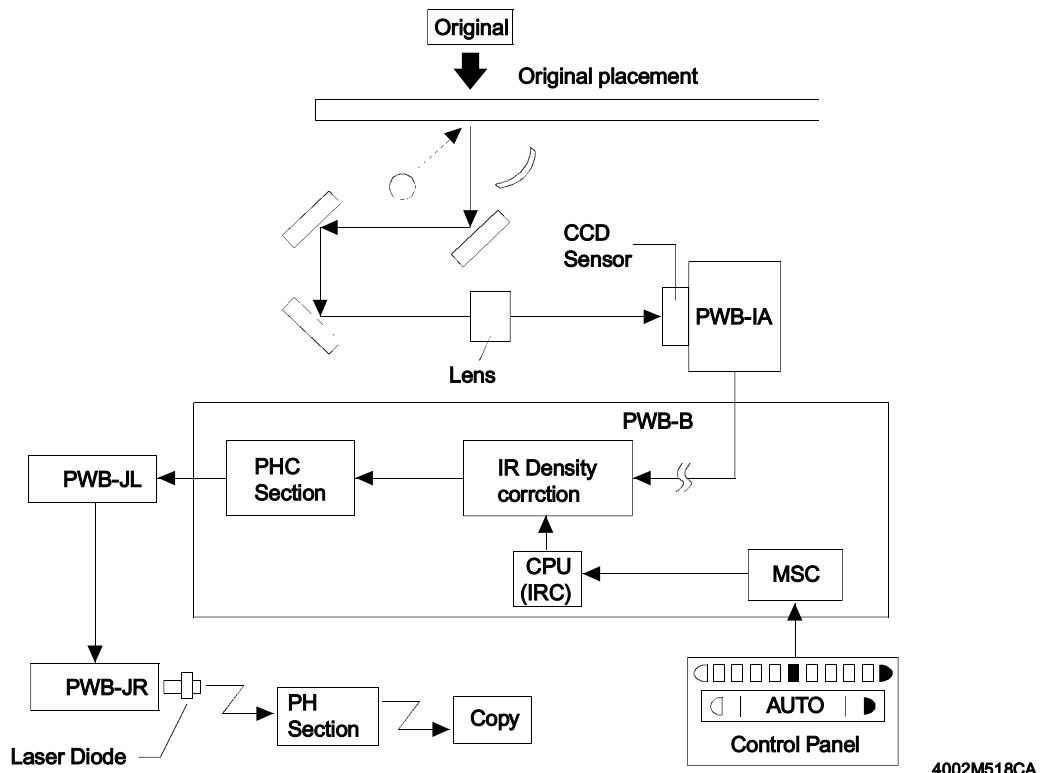
- This is a method in which image data is sampled while the Scanner makes a prescan motion.
- The sampled image data is accumulated in the form of a reflectivity histogram which is used to calculate the background removal threshold corresponding to the entire surface of the original.

- \* Given below is the control flow when the Auto Exposure mode is selected.

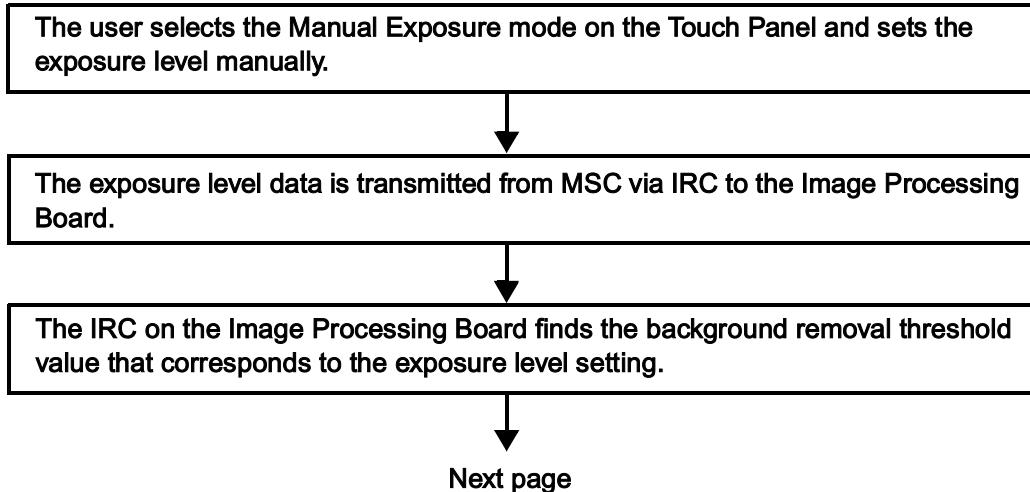


## (2) Manual Exposure Control

- Manual Exposure Control selects an exposure level variable in nine steps according to the setting made on the control panel by the user when the copier is in the Manual Exposure mode.
- According to the manual exposure setting made on the control panel, the CPU of PWB-B transmits a background removal threshold to the IR Density Correction block for density correction. This background removal threshold has been predetermined according to the manual exposure setting.



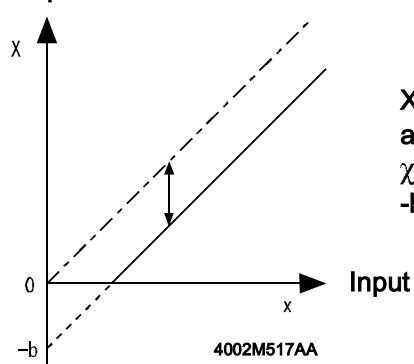
\* The control flow during manual density mode is described below.



Before page

The threshold value is transmitted from the IRC to the IR Density Correction block. This block then corrects the image density of incoming data in accordance with the relation shown below.

Output



$X$ : Image density value after density correction

$a$ : 1

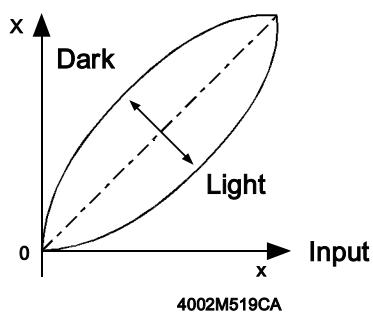
$\chi$ : Image density value before density correction

- $b$ : Threshold (intercept)

For all quality modes other than "Photo," the gradation curve of the density-corrected data is adjusted in accordance with the Image Quality mode so as to enhance the reproduction of the high-density areas.

If the Image Quality mode is set to "Photo," however, the gradation curve is designed to promote image smoothness, even density, and low noise. In this case, the curve is adjusted in accordance with the manual density setting, as illustrated below.

Output



The above processing enables the user to select copy density effectively for any of the image quality modes.

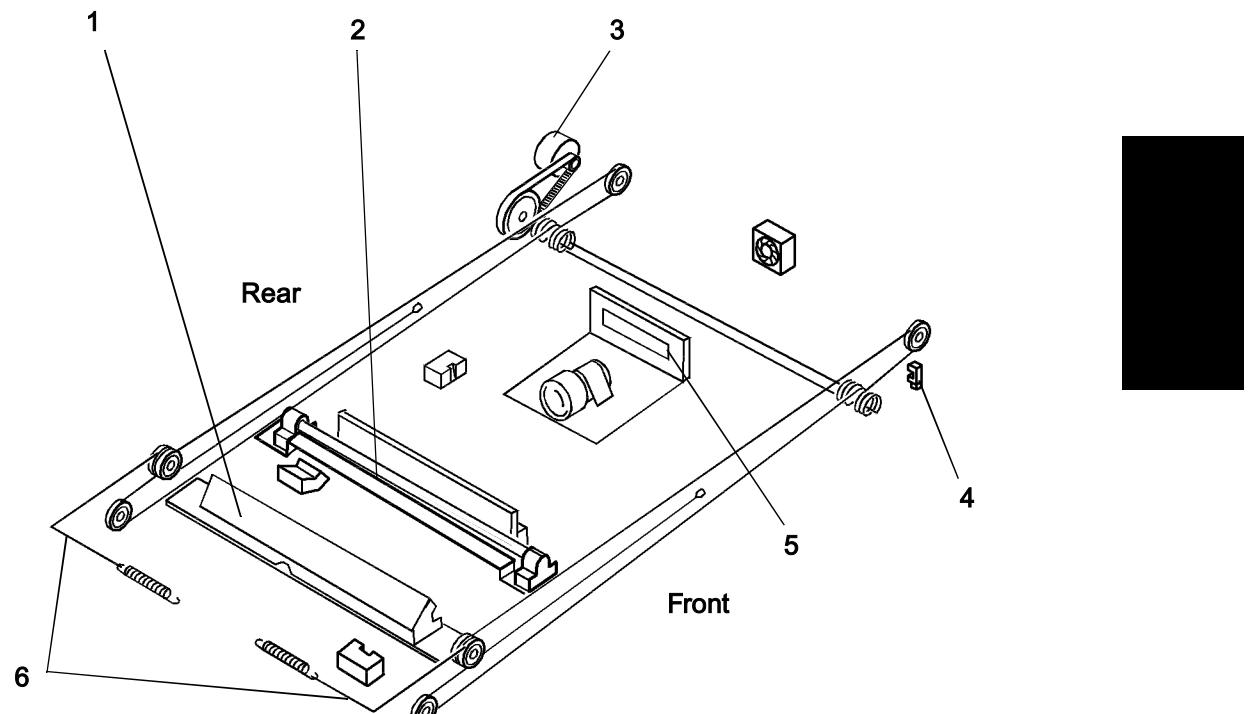
## 8-5. Scanner and Mirrors Carriage Movement Mechanism

### (1) Scanner Movement Mechanism

- The Scanner is driven by the Scanner Motor at a speed appropriate to the set zoom ratio with reference to the speed in the full size mode.
- The Scanner is detected at its home position by the Scanner Reference Position Sensor.

### (2) 2nd/3rd Mirrors Carriage Movement Mechanism

The 2nd/3rd Mirrors Carriage moves at a speed half that of the Scanner, thereby keeping constant the optical path length between the original and the CCD Sensor.

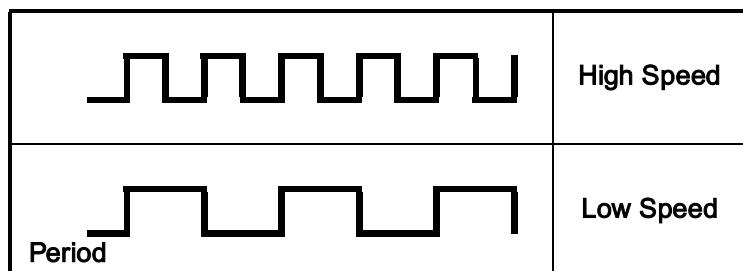


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- |  |                        |
|--|------------------------|
| 1. 2nd/3rd Mirror Carriage                     | 5. CCD Sensor          |
| 2. Scanner                                     | 6. Scanner Drive Cable |
| 3. Scanner Motor (M51)                         |                        |
| 4. Scanner Reference Position Sensor<br>(PC51) |                        |

## 8-6. Scanner Motor Drive Control

- The speed at which the Scanner is moved is controlled by varying the period of the motor drive pulse that is timed with the reference clock.



- The distance over which the Scanner travels is controlled by the number of motor drive pulses that correspond to each paper size and zoom ratio.

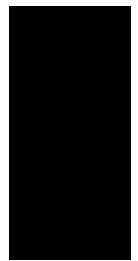
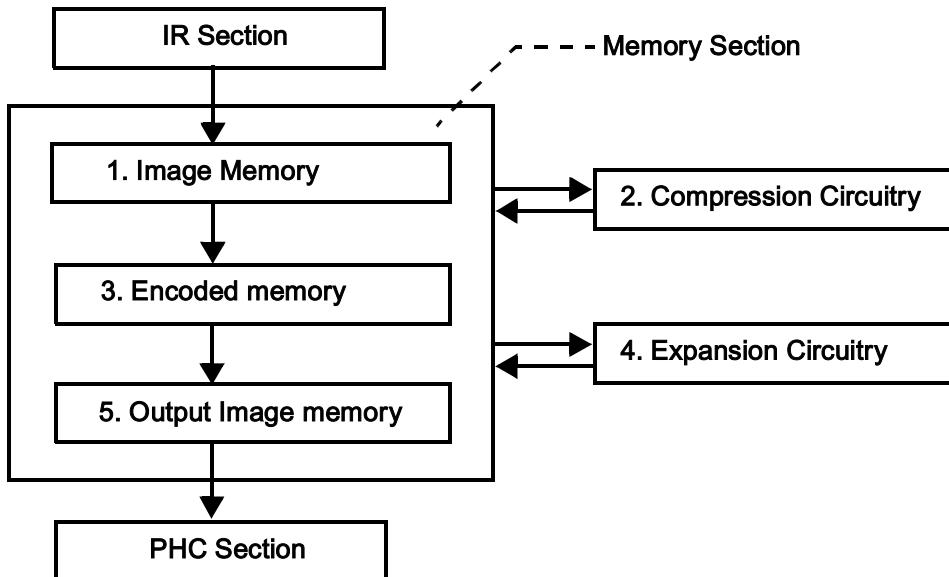
	CONTROL SIGNAL	ON	OFF	WIRING DIAGRAM
M51	PWB-IC PJ3IC-1~3	Pulse Output		10 -A

## 9. MEMORY SECTION

The Memory section stores the image density data output from the IR section to effectively carry out data transmission to the Printer section.

### 9-1. Image Processing Process

The binary image data transmitted from the Image Processing Board of the IR section undergoes the following processes before being transmitted to the PH section.



#### 1. Input Image Memory

- Stores binary image data.
- Consists of SDRAM, and is capable of storing about one A5 page of copy data.

#### 2. Compression Circuitry

- Reads the binary data from the Image Memory block, one line at a time, and further compresses it.
- Use of this compression step makes it possible for the next block (Encoded Memory block) to hold data.

#### 3. Encoded Memory

- Stores the encoded (compressed) data received from the previous block.
- Consists of SDRAM. Capable of holding data for up to about 100 pages of standard A4 originals.

#### 4. Expansion Circuitry

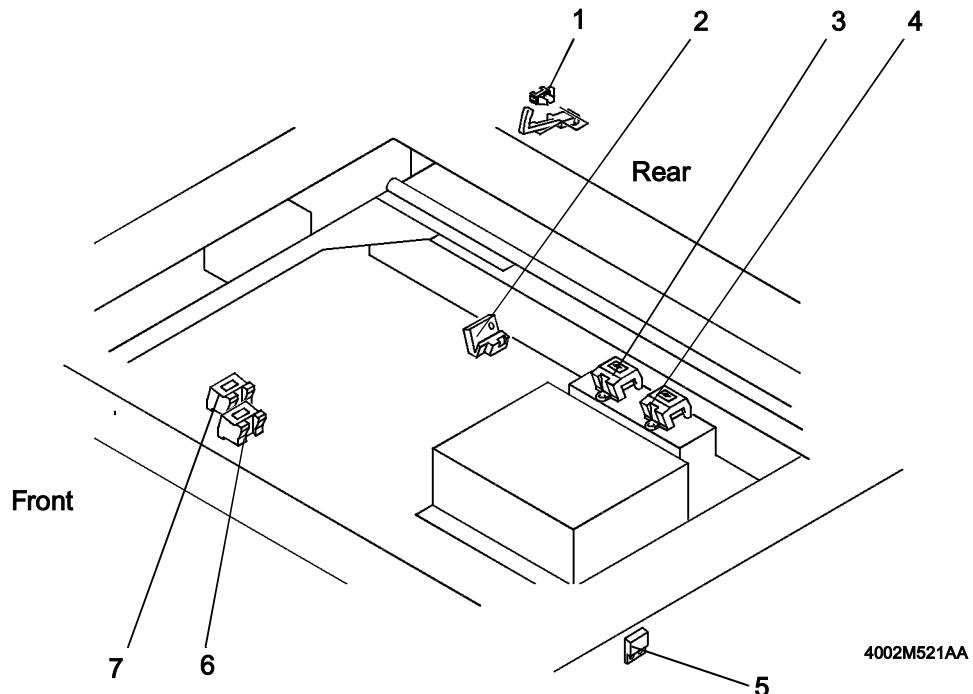
- Performs image rotation, shift, erase, and other editing functions for subsequent output to the printer.

#### 5. Output Image Memory

- Stores the expanded image data. It is then output to the PHC section.

## 10. Original Size Detecting Section

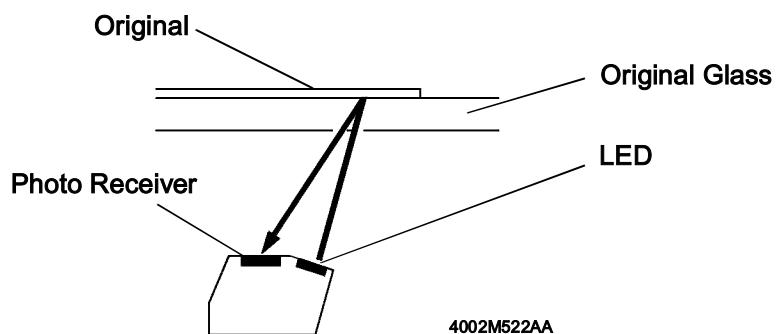
The original size detecting sensors fixed in the optical section are used to determine the size of the original in the Auto Paper or Auto Size mode.



- |  |  |
|--|--|
| 1. Original Cover Detecting Sensor<br>PC52     | 5. Size Reset Switch<br>S51                    |
| 2. Original Cover Detecting Sensor FD1<br>PC53 | 6. Original Cover Detecting Sensor CD2<br>PC57 |
| 3. Original Cover Detecting Sensor FD2<br>PC54 | 7. Original Cover Detecting Sensor CD1<br>PC56 |
| 4. Original Cover Detecting Sensor FD3<br>PC55 |  |

### 10-1. Original Size Detecting Operation

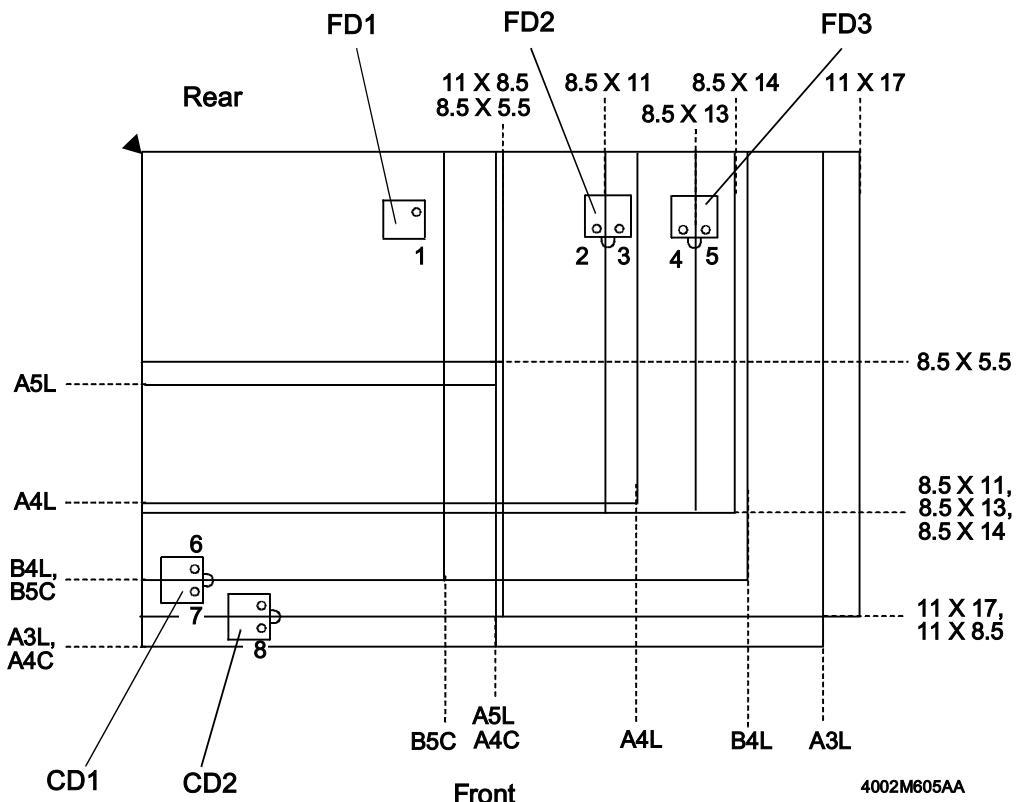
Each photo receiver of the original size detecting sensors responds to the light, which is emitted by the corresponding LED and reflected off the original, of a given level of intensity. If the intensity of the reflected light exceeds the given level, the size detecting board determines that there is an original.



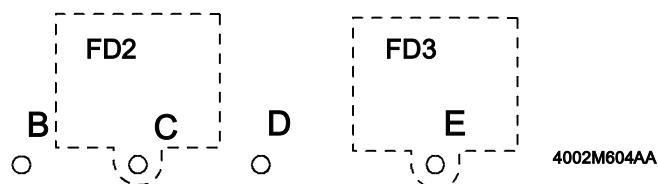
## 10-2. Original Size Detecting Sensors Locations

- The original size detecting sensors are located in the following positions to enable them to detect different sizes of the original.
- Adding optional original size detecting sensors increases the number of original sizes that can be detected by the system.

	FD1	FD2	FD3	CD1	CD2
Metric Areas	Standard	Standard	Optional	Standard	Optional
Inch Areas	Optional	Standard	Optional	Standard	Optional



\* FD2, FD3 Sensor Locations



### 10-3. Original Size Detection

The Original Size Detecting Board determines the correct original size based on the combination of statuses of the original, either present or absent, as detected by the original size detecting sensors.

#### \* Metric Area

Original Size	Need Optional Sensors	FD1	FD2		FD3 (Optional)		CD1		CD2 (Optional)
		1	2	3	4	5	6	7	8
A3L	No	●	●	●	(●)	(●)	●	●	(●)
B4L	No	●	●	●	(●)	(●)	●	-	( - )
A4L	No	●	●	●	(●)	( - )	-	-	( - )
A5L	No	●	-	-	( - )	( - )	-	-	( - )
A4C	No	●	-	-	( - )	( - )	●	●	(●)
8.5 × 11	No	●	●	-	( - )	( - )	-	-	( - )
11 × 17	Yes	●	●	●	(●)	(●)	●	●	( - )
8.5 × 14	Yes	●	●	●	(●)	(●)	-	-	( - )
8.5 × 13	Yes	●	●	●	(●)	( - )	-	-	( - )
11 × 8.5	Yes	●	-	-	( - )	( - )	●	●	( - )

●: Original Present -: Original Not Present ( ): Optional Sensor are Mounted

#### \* Inch Area - Standard

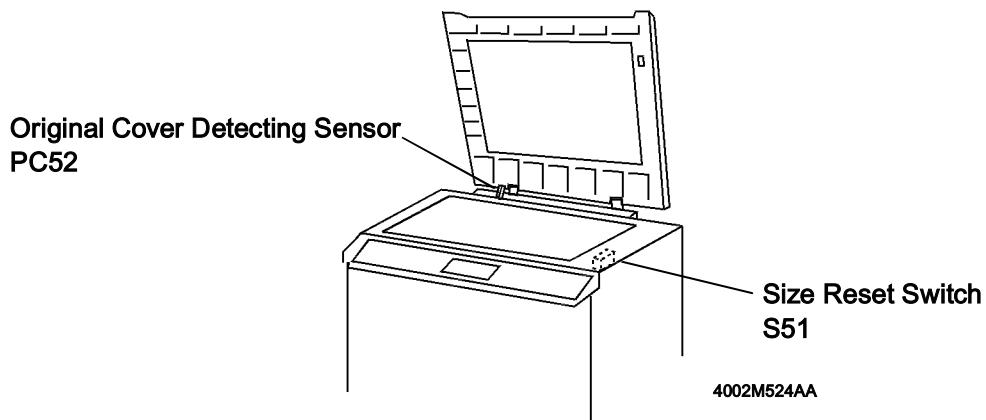
Original Size	Need Optional Sensors	FD1 (Optional)	FD2		FD3 (Optional)		CD1		CD2 (Optional)
		1	2	3	4	5	6	7	8
11 × 17	No	(●)	●	●	(●)	(●)	●	●	( - )
8.5 × 14	No	(●)	●	●	(●)	(●)	-	-	( - )
8.5 × 11	No	(●)	●	-	( - )	( - )	-	-	( - )
11 × 8.5	No	(●)	-	-	( - )	( - )	●	●	( - )
B4L	No	(●)	●	●	(●)	(●)	●	-	( - )
B5C	No	(●)	-	-	( - )	( - )	●	-	( - )
8.5 × 13	Yes	(●)	●	●	(●)	( - )	-	-	( - )
8.5 × 5.5	Yes	(●)	-	-	( - )	( - )	-	-	( - )
A3L	Yes	(●)	●	●	(●)	(●)	●	●	(●)
A4L	Yes	(●)	●	●	( - )	( - )	-	-	( - )
A4C	Yes	( - )	I	I	(●)	(●)	I	I	(●)

●: Original Present -: Original Not Present ( ): Optional Sensor are Mounted

## 10-4. Original Size Detection Timing

1	Takes size readings	When the Original Cover is raised to an angle of 15° or more (Original Cover Detecting Sensor is deactivated).
2	Affirms size readings	When the Original Cover is lowered to an angle of 15° or less (Original Cover Detecting Sensor is just activated) and the Size Reset Switch is actuated. Or, when the Start key is pressed with the Original Cover Detecting Sensor in the deactivated state.
3	Resets size readings	When the Original Cover is raised and the Size Reset Switch is just deactuated from actuated state.
4	Unable to take size readings	A notice is given to the user if the Start key is pressed with the Original Cover not raised to an angle of 15° or more in a size reset condition.

\* :Numbers 1 through 4 are enabled when the EDH is mounted; only numbers 1 and 2 are enabled when the Original Cover is mounted.

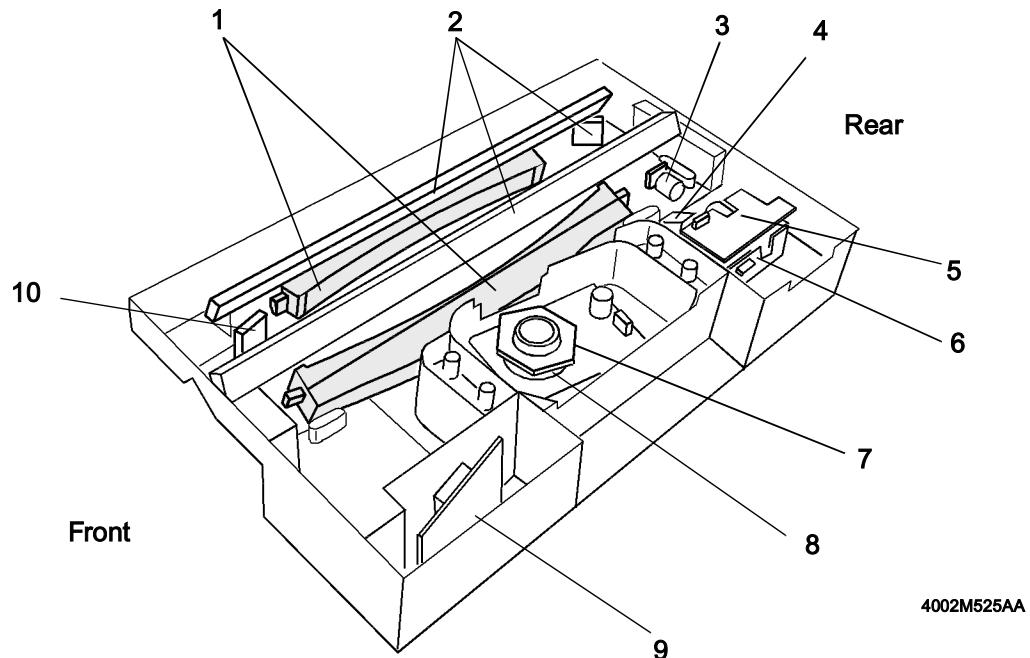


	CONTROL SIGNAL	Blocked	Unblocked	WIRING DIAGRAM
PC52	PWB-B PJ5B-2	L	H	13 - C

	CONTROL SIGNAL	ON	OFF	WIRING DIAGRAM
S51	PWB-B PJ306B-7	H	L	7 - I

## 11. PH SECTION

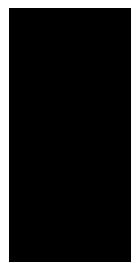
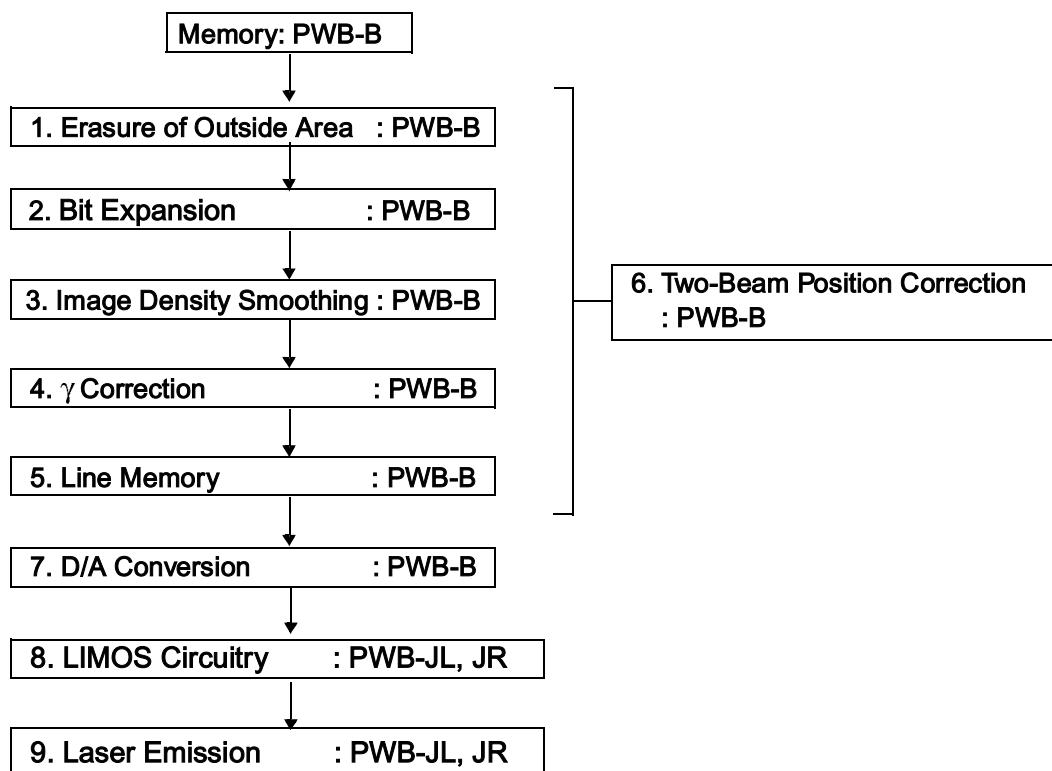
Image data sent from the memory section is corrected and, based on the corrected data, a laser light is projected onto the surface of the PC Drum to form a corresponding latent image.



- |   |                              |
|---|------------------------------|
| 1. Lenses                               | 6. LD Drive Board L (PWB-JL) |
| 2. Return Mirror                        | 7. Polygon Mirror            |
| 3. Cylindrical Lens                     | 8. Polygon Motor (M3)        |
| 4. Beam Interval Correction Motor (M20) | 9. SOS Sensor Board (PWB-JS) |
| 5. LD Drive Board R (PWB-JR)            | 10. SOS Mirror               |

## 11-1. Image Processing Process

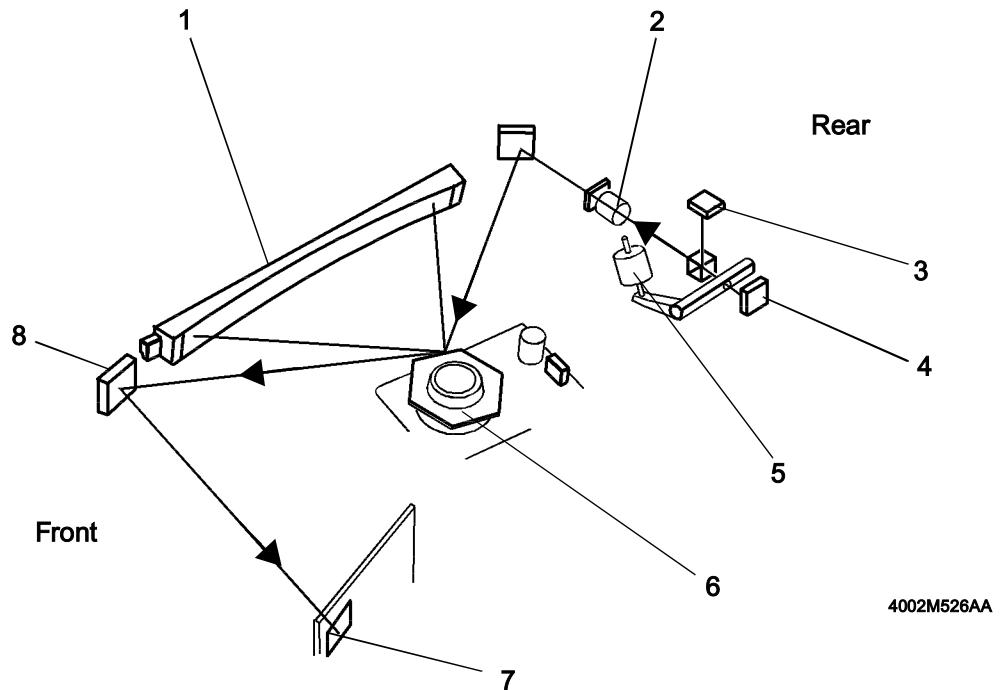
The PH image processing system is composed of the following blocks. These blocks implement a variety of types of corrective processing, as described below.



1. Erasure of Outside Area: PWB-B  
Erases the area outside of the image area, so as to prevent firing of the laser over non-image areas.
2. Bit Expansion: PWB-B  
If image quality is set to photo mode, this block expands binary data values into 8-bit data values. (If image quality is set to the Text mode, the block outputs binary image density data values without change.)
3. Image Density Smoothing: PWB-B  
The edge data is filtered in the Text mode and data is converted, thereby reducing jagges that would otherwise occur along the edges.
4.  $\gamma$  Correction: PWB-B  
Adjusts data so that the copied image's gradation characteristics will be proportional to the gradation characteristics of the original. Adjustment is made by selecting the appropriate gamma look-up table, then using the table data to convert image density values into appropriate laser intensity values.
5. Line Memory: PWB-B  
Corrects for differences in data transfer frequency with respect to PH line memory.
6. Two-Beam Position Correction: PWB-B  
The amount of positional deviations in the main and sub scanning directions of the two laser beams is detected to make the necessary corrections.
  - Main scanning direction: Correction is made by advancing or retarding the laser emission start timing signal.
  - Sub scanning direction: Correction is made by turning the stepping motor of the PH.
7. D/A Conversion: PWB-B  
Converts the 8-bit laser intensity data values into analog laser intensity voltages.
8. LIMOS Circuitry: PWB-JL, JR  
Activates the APC (Auto Power Control) function that controls the current flowing through the LD for each line; activates the ACC (Auto Current Control) function that stabilizes the drive current for each dot.
9. Laser Emission: PWB-JL, JR
  - Fires laser onto PC drum in accordance with the emission level given by the LIMOS block.
  - The copier employs 2 laser beams, and therefore prints two lines at a time.

## 11-2. Laser Emission Timing (SOS Signal)

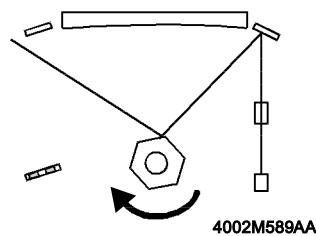
The laser diode is forced to turn ON to project the laser beam onto the SOS Sensor Board, which generates an SOS signal.



- |                              |   |
|------------------------------|---|
| 1. Lens                      | 5. Beam Interval Correction Motor (M20) |
| 2. Cylindrical Lens          | 6. Polygon Mirror                       |
| 3. LD Drive Board R (PWB-JR) | 7. SOS Sensor                           |
| 4. LD Drive Board L (PWB-JL) | 8. SOS Mirror                           |

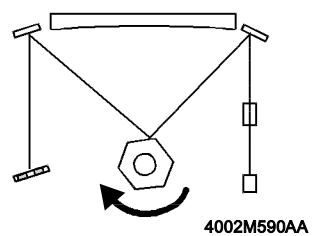
\* Relation between laser emission timing and SOS signal

The light path of the laser beam changes as the Polygon Mirror turns. The SOS signal synchronizes the rotation of the Polygon Mirror with the laser emission timing.



A. LD force-ON

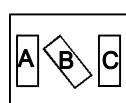
The laser diode is forced ON to output an SOS signal.



B. SOS signal output

A laser beam strikes the SOS Sensor Board and sensor A determines the SOS signal output timing.  
After the timing has been determined, the laser beam is turned OFF.

SOS Sensor Board

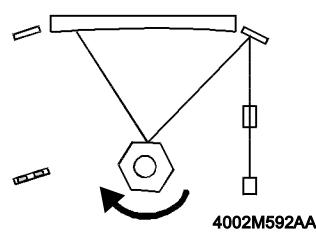


Sensor A output only is used.



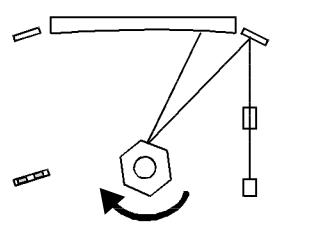
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SOS signal output timing



C. Start of image data output

The laser emission start timing is controlled according to the size of the image to be output.

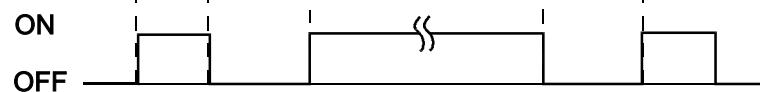


D. End of image data output

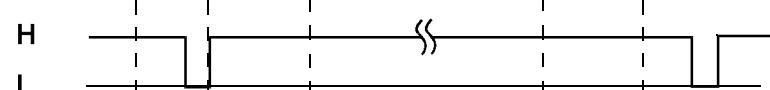
The laser radiation area is controlled according to the size of the image to be output.  
After the image area has been covered, the laser beam is turned OFF.

Laser beam area according to the image data

Laser Diode (LD)



SOS Signal

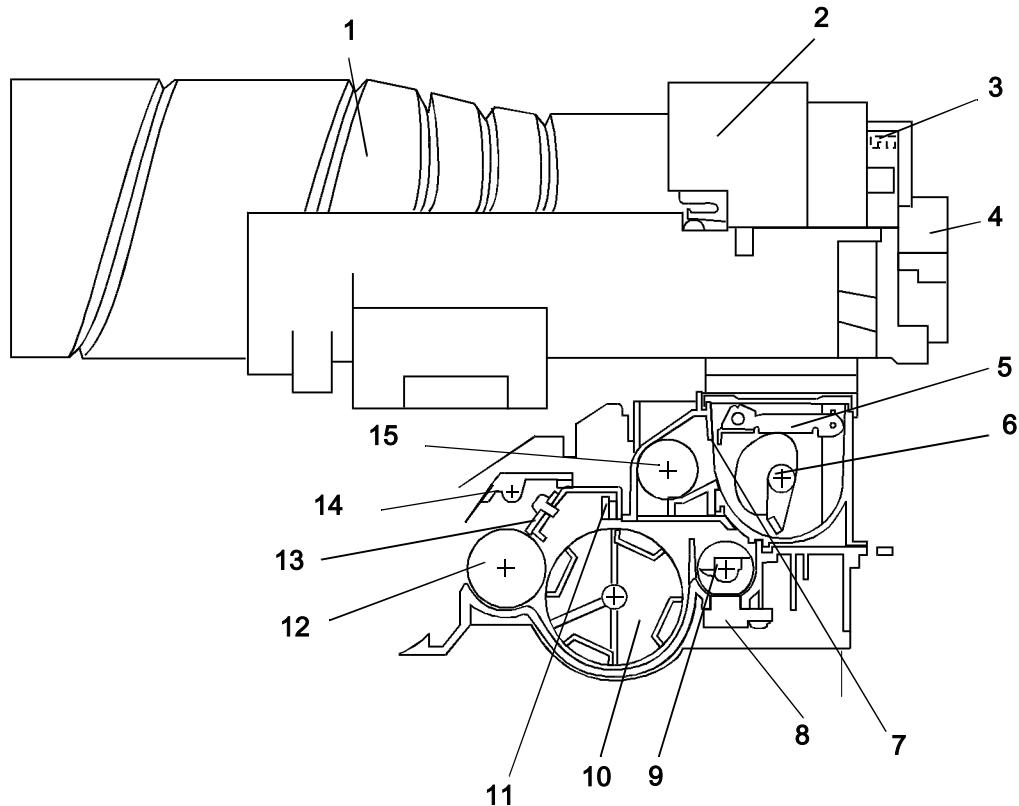


Sequence

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## 12. DEVELOPING UNIT SECTION

The Developing Unit agitates and triboelectrically charges toner so that it sticks to the electrostatic latent image formed on the surface of the PC Drum, then changing the image to a visible, developed one.

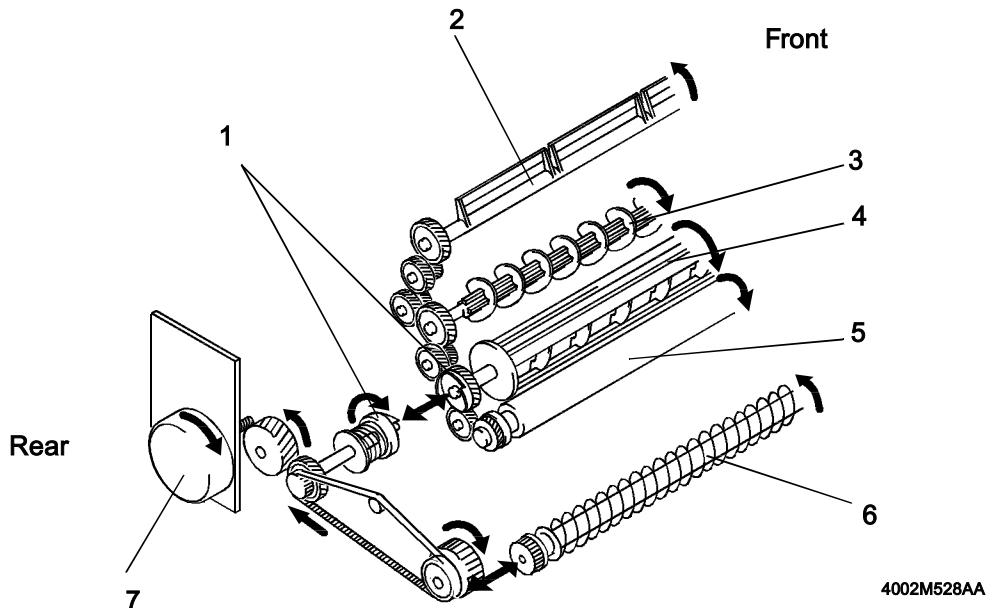


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- |  |   |
|--|---|
| 1. Toner Bottle                                | 8. ATDC Sensor UN2                        |
| 2. Toner Bottle Holder                         | 9. Developer Conveying /Agitating Screw   |
| 3. Toner Bottle Home Position Sensor<br>PC21   | 10. Bucket Roller                         |
| 4. Main Hopper Toner Replenishing<br>Motor M13 | 11. Magnet Sheet                          |
| 5. Sub Hopper Toner Empty Detecting<br>Lever   | 12. Sleeve/Magnet Roller                  |
| 6. Sub Hopper Toner Agitating Lever            | 13. Doctor Blade                          |
| 7. Toner Regulator                             | 14. Developer Scattering Prevention Plate |
|  | 15. Sub Hopper Toner Replenishing Roller  |

## 12-1. Developing Unit Drive Mechanism

The rollers and screws are driven through a gear train from the motor.

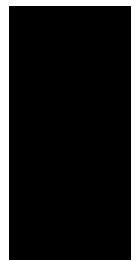
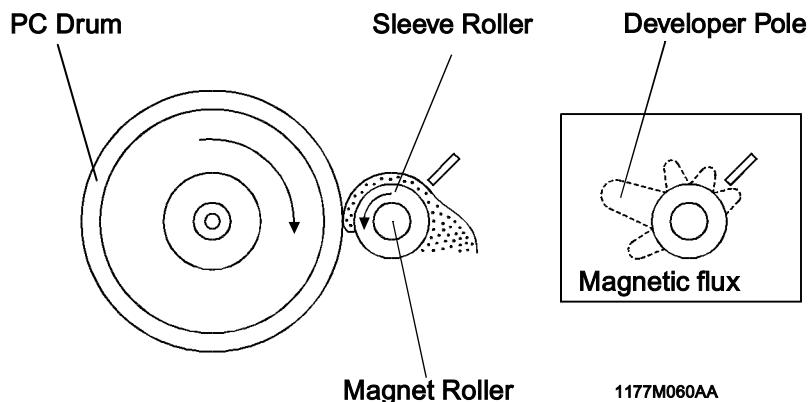


- |  |                                   |
|--|-----------------------------------|
| 1. Coupling Gear                       | 5. Sleeve/Magnet Roller           |
| 2. Sub Hopper Toner Agitating Lever    | 6. Toner Conveying Coil           |
| 3. Developer Conveying/Agitating Screw | 7. Developing Unit Drive Motor M1 |
| 4. Bucket Roller                       |                                   |

	CONTROL SIGNAL	ON	OFF	WIRING DIAGRAM
M1	PWB-A PJ7A-6A	L	H	4 - C

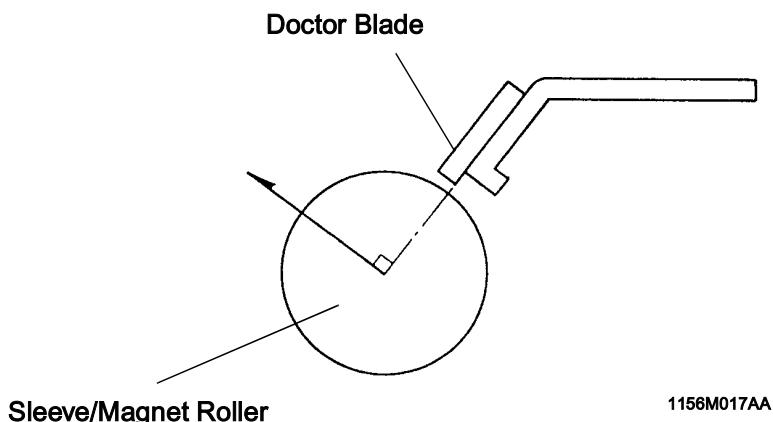
## 12-2. Sleeve/Magnet Roller

- The Sleeve/Magnet Roller, which consists of an outer sleeve roller and an inner magnet roller, conveys developer to the point of development.
- The magnetic force of the magnet roller at the point of development is the strongest so that the developer brush stands straight up to deliver the greatest amount of toner to the point of development.



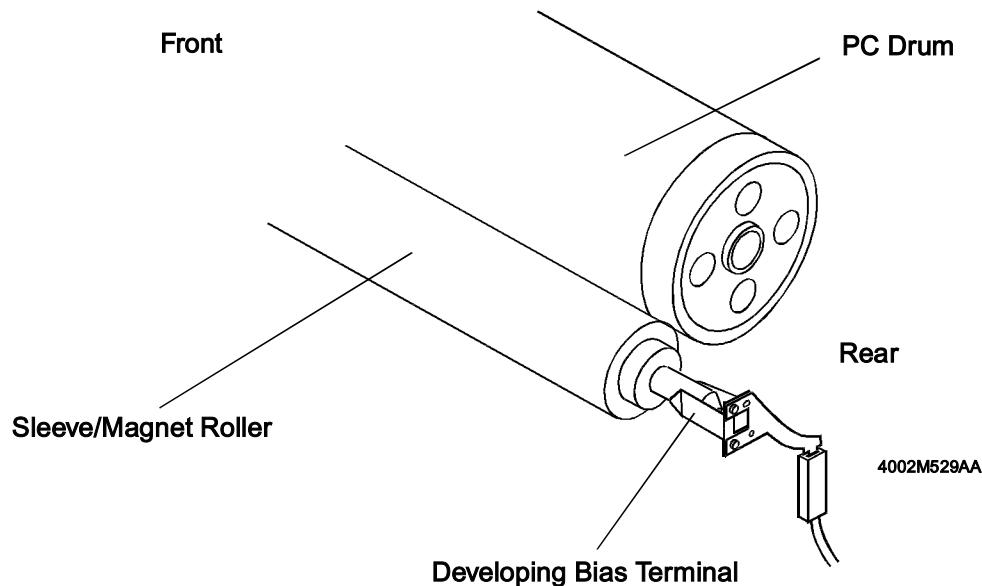
## 12-3. Doctor Blade

The Doctor Blade controls the height of the developer brush, ensuring that the developer on the Sleeve/Magnet Roller levels out.



## 12-4. Developing Bias

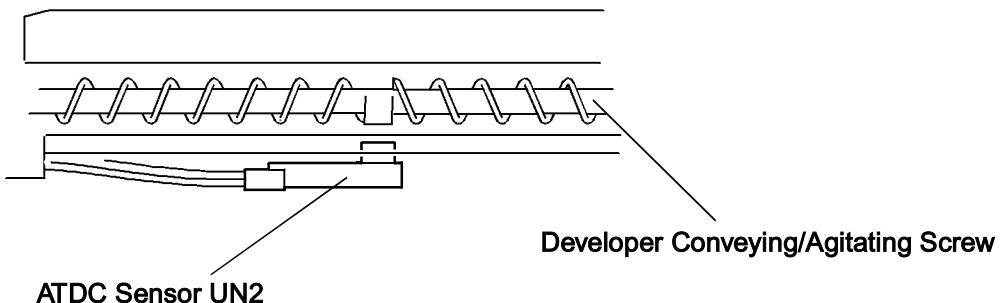
- A developing bias voltage ( $V_b$ ) is applied to the sleeve roller to prevent a foggy background on the copy.
- The amount of toner attracted onto the surface of the PC Drum depends on how much lower the PC Drum surface potential ( $V_i$ ) is than  $V_b$  (i.e., potential difference).
- \* When the potential difference is large, a greater amount of toner is attracted.
- \* When the potential difference is small, a smaller amount of toner is attracted.



	CONTROL SIGNAL	ON	OFF	WIRING DIAGRAM
Developing Bias	PWB-A PJ12A-8B	L	H	4 - G

## 12-5. ATDC Sensor

The ATDC Sensor detects the toner-to-carrier ratio (T/C) of the developer in the Developer Mixing Chamber.



	CONTROL SIGNAL	REFERENCE T/C RATIO	STANDARD OUTPUT VOLTAGE	WIRING DIAGRAM
UN2	PWB-A PJ7A-10B	5.0 %	2.27 V	4 - E

### (1) ATDC Sensor Automatic Adjustment

The reference value for the ATDC Sensor is automatically adjusted as detailed below using the ATDC Sensor Automatic Adjustment mode.

With the copier set in the ATDC Sensor Automatic Adjustment mode, press the Start key.

↓  
The developer is mixed.

↓  
The ATDC Sensor converts the reference T/C (5.0 %)  
to a corresponding voltage value and outputs it.

↓  
Is the output voltage 2.27 V?

YES  
↓  
The voltage input to the ATDC Sensor from the  
Master Board at this time is fixed as the reference  
voltage.

NO  
↓  
The voltage input to the ATDC Sensor from the  
Master Board is varied.  
2.27 V or more: Decrease the voltage.  
Less than 2.27 V: Increase the voltage.

#### NOTE

- If the automatic adjustment mode is run at a time when the starter has not been changed, it can result in a wrong T/C reference value being set by the copier. Avoid casual use of this mode.
- If the setting value has been cleared as a result of the Memory Board being replaced, return the value of "ATDC Control" under the Adjust mode back to the original one before the board was replaced.

## 12-6. Toner Replenishing Control

### Toner Replenishing Control by ATDC Sensor

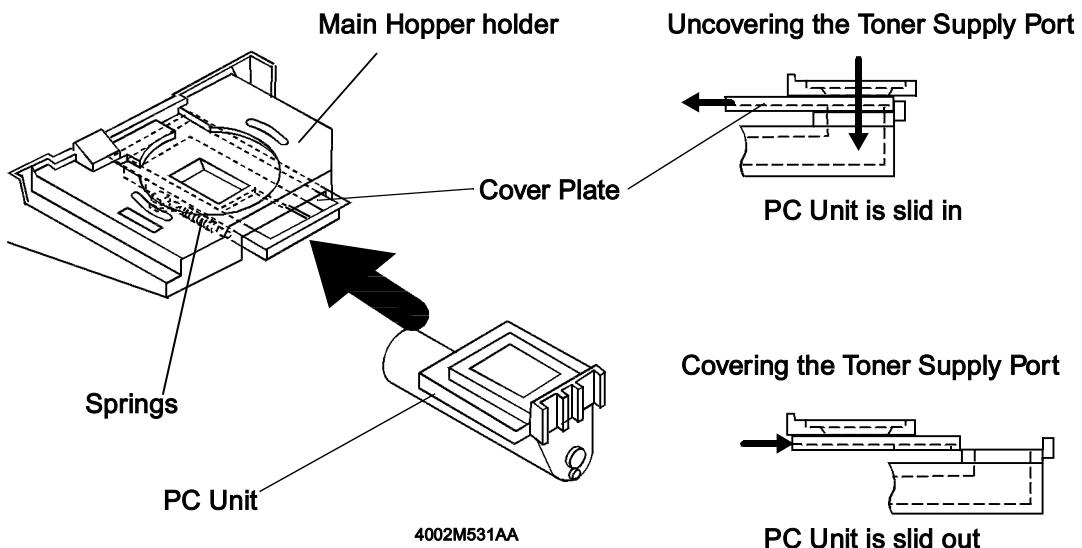
The ATDC Sensor samples T/C for each scan motion and the copier compares the reading with the reference T/C to determine the appropriate amount of toner to be replenished.

Toner Replenishing	Conditions	Amount Replenished
Large amount	The sensor reading is lower than the reference T/C ratio [4.5 %] by 0.5 % or more.	Approx. 216 mg
Small amount	The sensor reading is lower than the reference T/C ratio [4.5 %] by less than 0.5 %	Approx. 101 mg
Fixed amount	The sensor reading is higher than the reference T/C ratio [4.5 %] by less than 0.5 %	Approx. 22 mg
None	The sensor reading is higher than the reference T/C ratio [4.5 %] by 0.5 % or more.	Approx. 0 mg

\* The amount of toner replenished varies according to the paper size (given in the table are figures for A4).

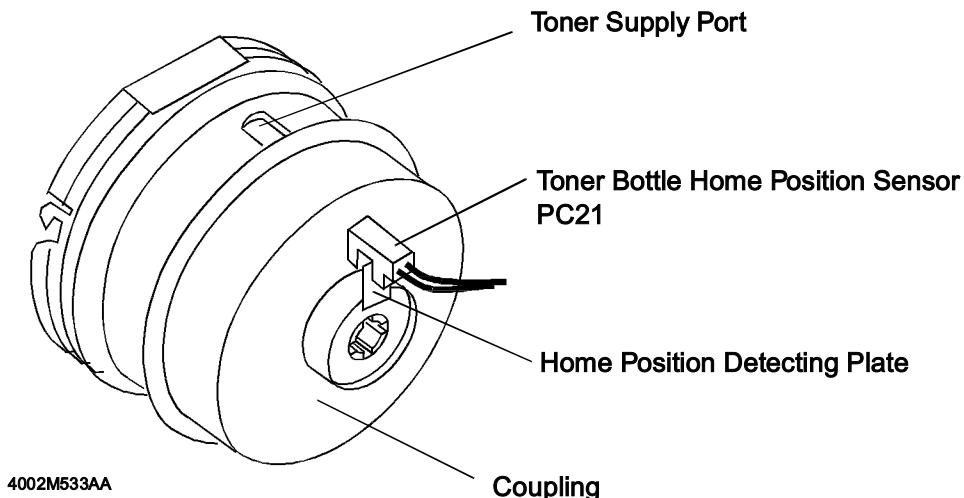
## 12-7. Toner Supply Hole Covering/Uncovering Mechanism

The Toner Supply Hole is covered to prevent toner from dropping into the inside of the copier when the PC Unit is slid out of the copier.



## 12-8. Toner Bottle Home Position Detection Mechanism

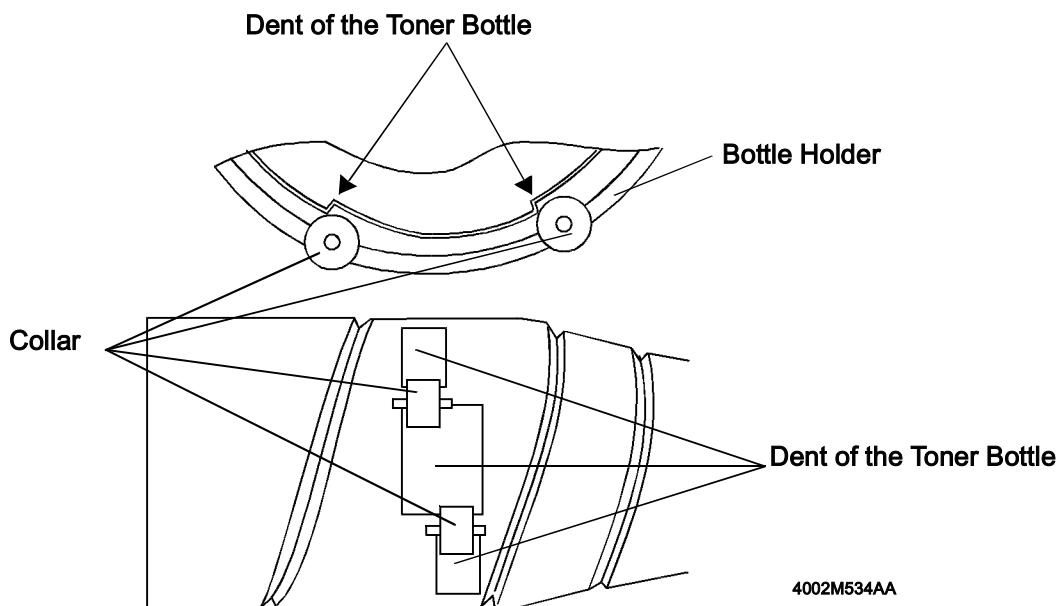
The Toner Bottle is detected at its home position by a home position detection sensor. When the Toner Bottle is at the home position (stationary), its toner supply port should face up.



	CONTROL SIGNAL	Blocked	Unblocked	WIRING DIAGRAM
PC21	PWB-A PJ11A-5	H	L	4 - B

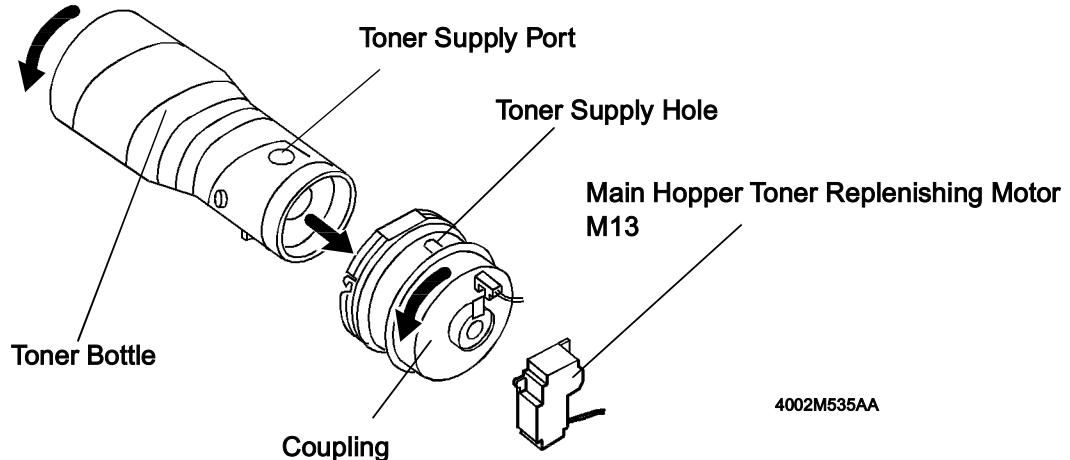
## 12-9. Toner Bottle Vibration Mechanism

When the dents in the Toner Bottle move past the collars in the Bottle Holder, the Toner Bottle is vibrated to prevent some of the toner from remaining unconsumed in the bottle.



## 12-10. Main Hopper Toner Replenishing Mechanism

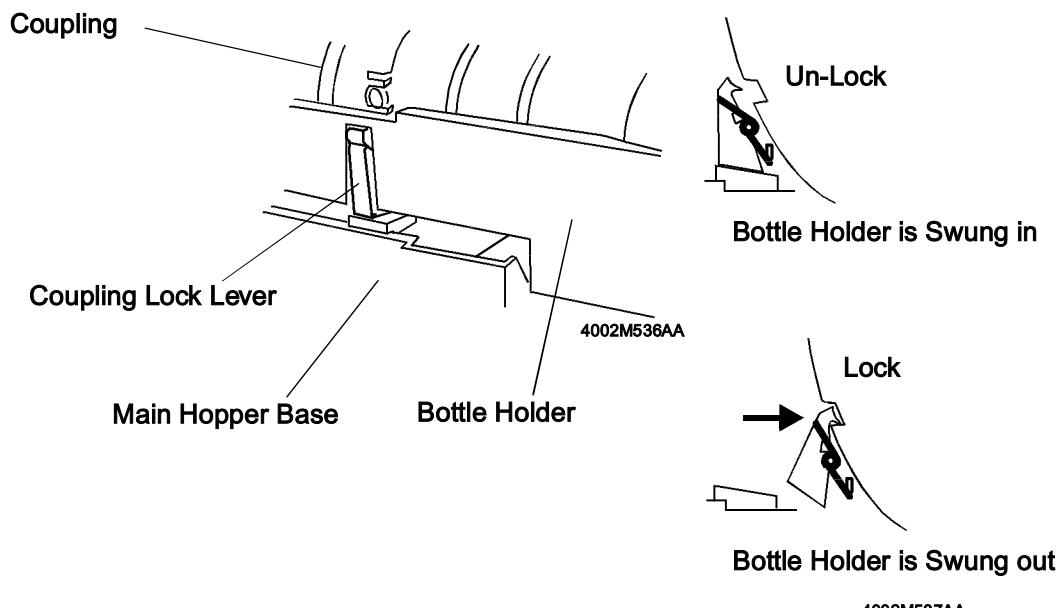
- The Main Hopper Toner Replenishing Motor supplies toner from the Toner Bottle to Sub Hopper.
- Toner is replenished each time the toner-empty detection switch of the Sub Hopper is turned ON and OFF.



	CONTROL SIGNAL	ON	OFF	WIRING DIAGRAM
M13	PWB-A PJ11A-1	H	L	4 - B

## 12-11. Main Hopper Locking Mechanism

The coupling is provided with a locking mechanism that prevents the coupling from deviating from the correct position when the Toner Bottle is removed or reinstalled.

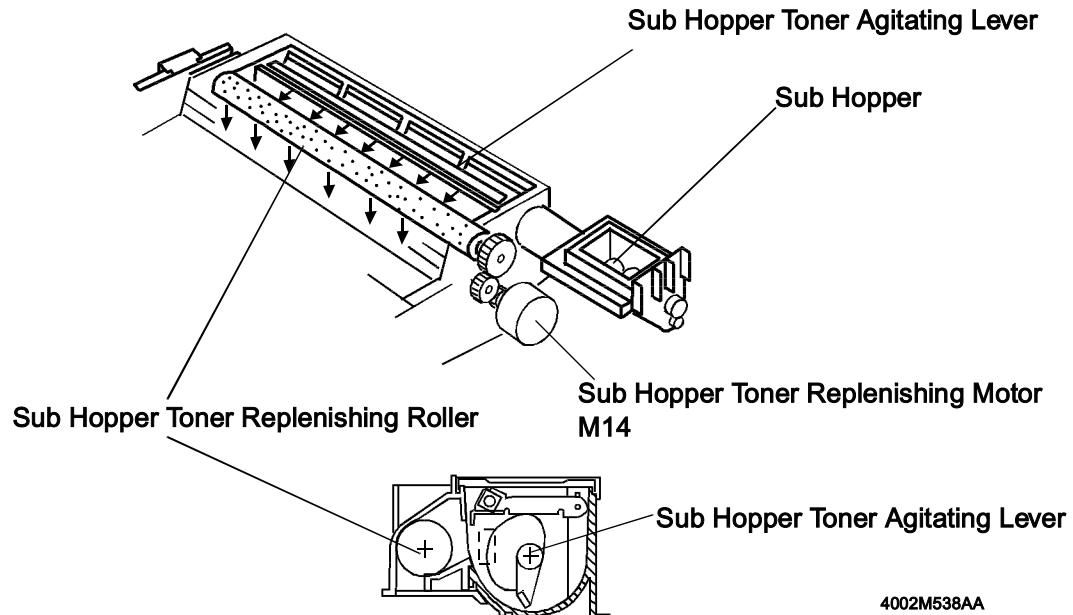


Bottle Holder is Swung out

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## 12-12. Sub Hopper Toner Replenishing Mechanism

- The Sub Hopper Toner Replenishing Motor replenishes toner from the Sub Hopper to the Developer Mixing Chamber.
- The toner replenishing time is calculated based on the T/C reading and paper size.

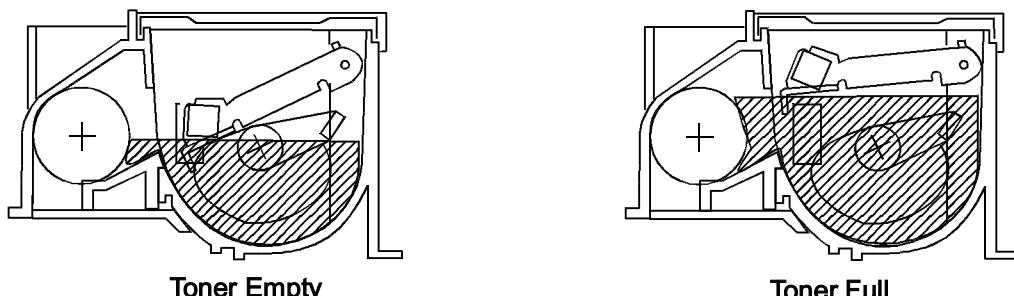
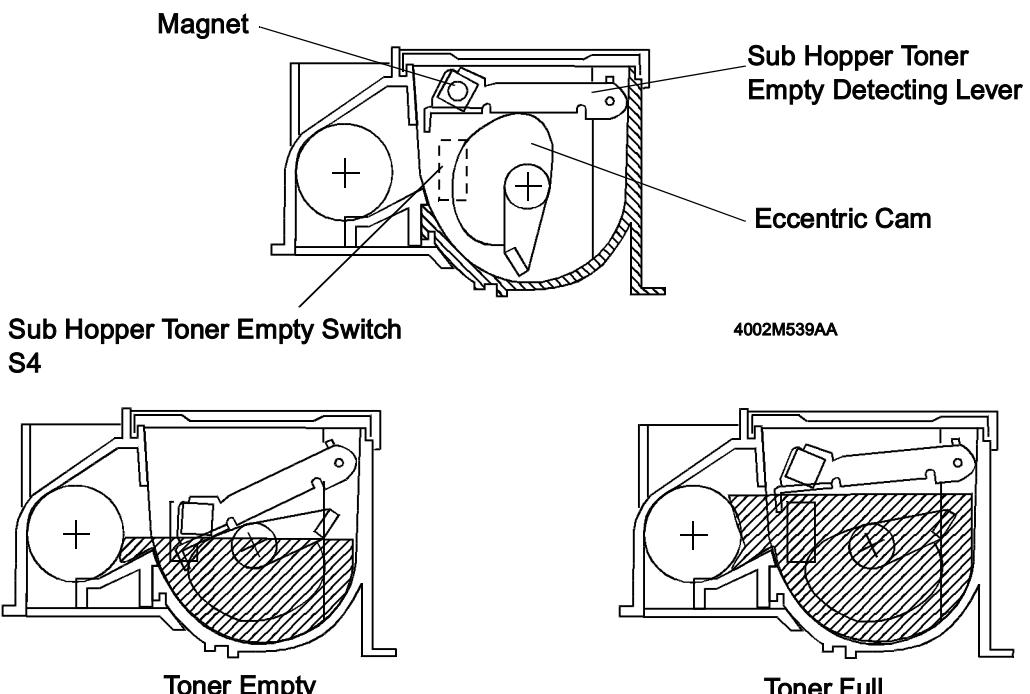


	CONTROL SIGNAL	ON	OFF	WIRING DIAGRAM
M14	PWB-A PJ7A-2B	L	H	4 - C

## 12-13. Sub Hopper Toner Empty Detecting Mechanism

- A magnet and a toner-empty detecting switch detect a toner-empty condition in the Sub Hopper.
- As toner in the Sub Hopper is consumed, the magnet turns ON the Sub Hopper Toner Empty Switch. This causes the copier to start a toner replenishing sequence. If the Sub Hopper Toner Empty Switch remains ON for 2 sec. or more even when the Toner Bottle has been turned for 60 sec., the copier determines that it is a toner-near-empty condition.
- A toner-empty condition is detected when T/C becomes less than 3% in a toner-near-empty condition.

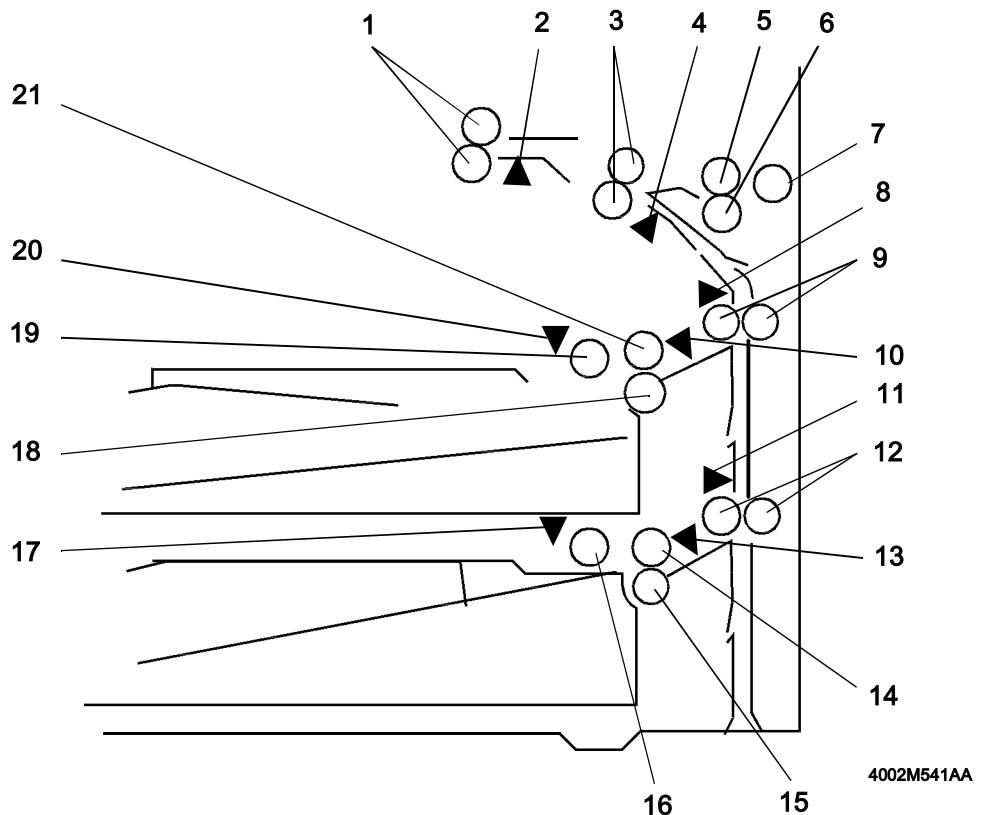
	Detecting Conditions
Toner Near Empty Detected	The Sub Hopper Toner Empty Switch remains ON for 60 second after a toner replenishing sequence has been started.
Toner Empty Detected	T/C becomes less than 3% in a toner-near-empty condition.



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	CONTROL SIGNAL	ON	OFF	WIRING DIAGRAM
S4	PWB-A PJ7A-12B	L	H	4 - E

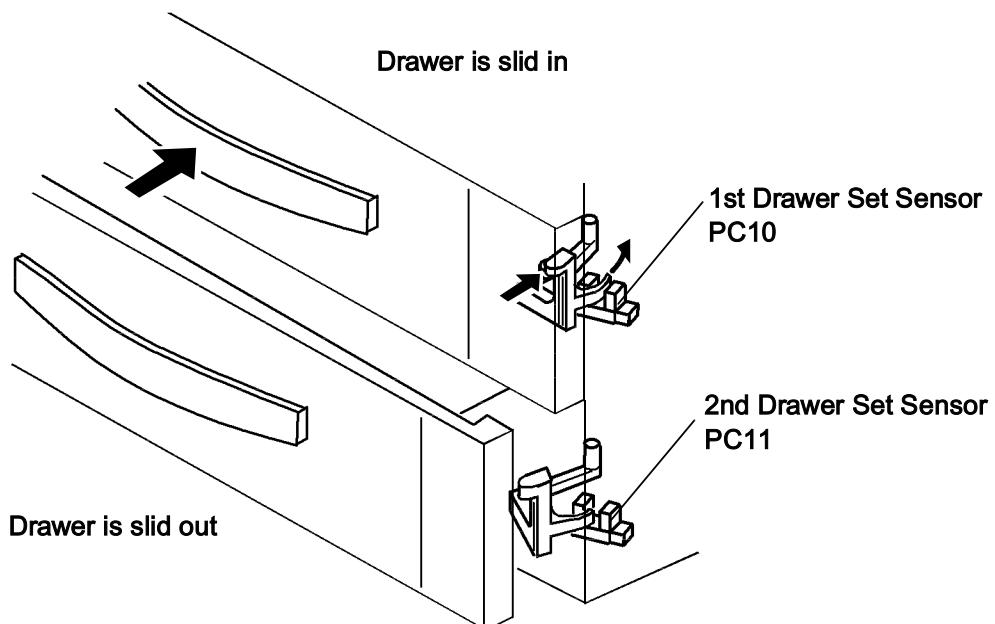
## 13. PAPER TAKE UP/FEED SECTION



- 1. Synchronizing Roller
- 2. Synchronizing Roller Sensor  
PC1
- 3. Transport Rollers
- 4. Transport Roller Sensor  
PC2
- 5. Manual Bypass Feed Roll
- 6. Manual Bypass Separator Roll
- 7. Manual Bypass Take-Up Roll
- 8. Paper Leading Edge Sensor SW1  
PC5
- 9. Upper Vertical Transport Roller
- 10. 1st Drawer Paper Take-Up Sensor  
PC3
- 11. Paper Leading Edge Sensor SW2  
PC6
- 12. Lower Vertical Transport Roller
- 13. 2nd Drawer Paper Take-Up Sensor  
PC4
- 14. 2nd Drawer Feed Roll
- 15. 2nd Drawer Separator Roll
- 16. 2nd Drawer Paper Take-Up Roll
- 17. 2nd Drawer Paper Empty Sensor  
PC17 (at front of copier)
- 18. 1st Drawer Separator Roll
- 19. 1st Drawer Paper Take-Up Roll
- 20. 1st Drawer Paper Empty Sensor  
PC16 (at front of copier)
- 21. 1st Drawer Feed Roll

### 13-1. Drawer In Position Detection

When the drawer is slid into the copier, the light blocking plate blocks the Set Sensor. The copier then knows that the drawer has been slid in position.

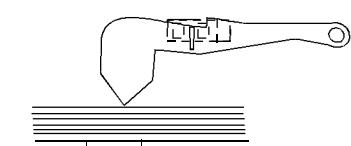
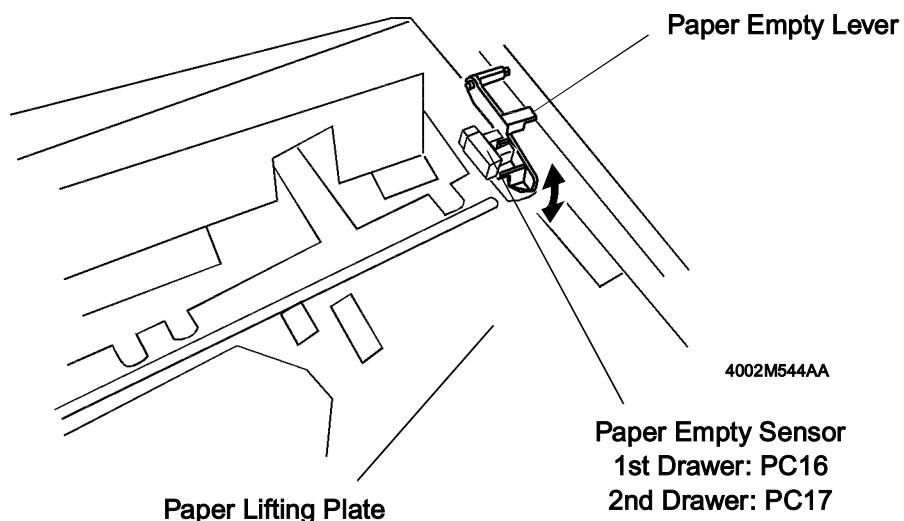


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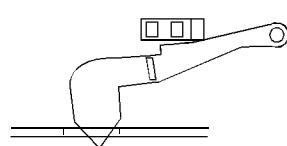
	CONTROL SIGNAL	Blocked	Unblocked	WIRING DIAGRAM
PC10 (1st Drawer)	PWB-A PJ3A-9A	H	L	27 - D
PC11 (2nd Drawer)	PWB-A PJ3A-9B	H	L	27 - D

## 13-2. Paper Empty Detection Mechanism

The Paper Empty Sensor detects a paper-empty condition in the drawer.



Paper Present  
PC16, 17 Blocked



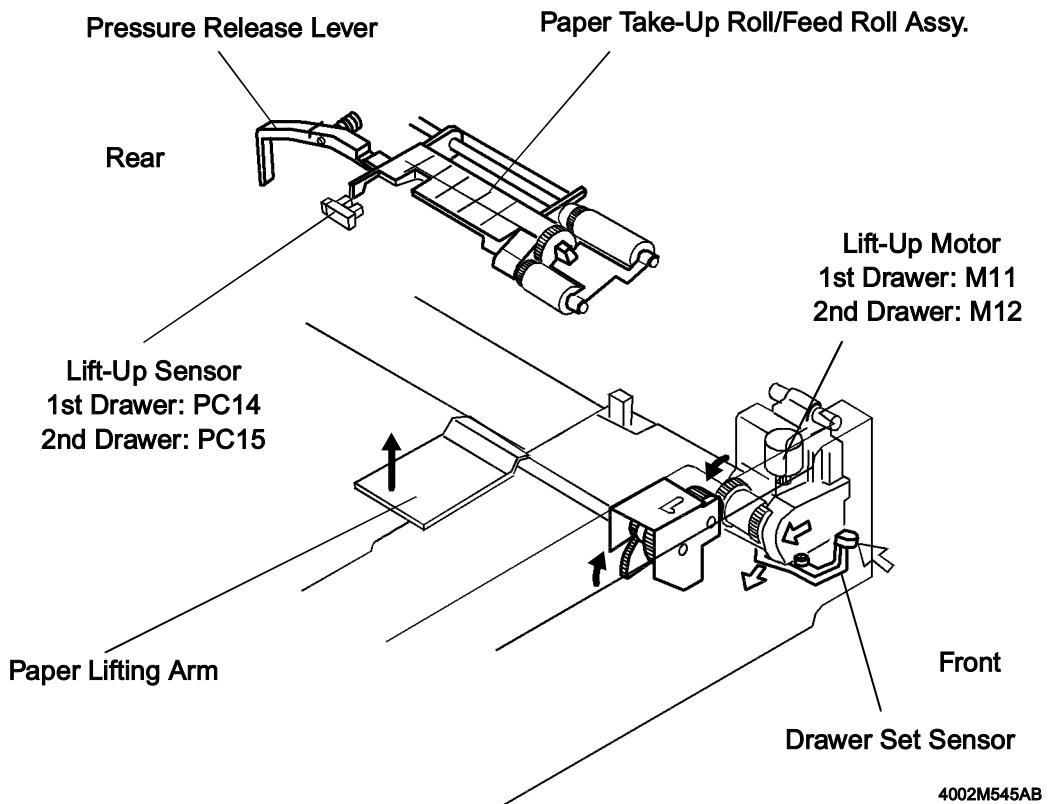
Paper not Present  
PC16, 17 Unblocked

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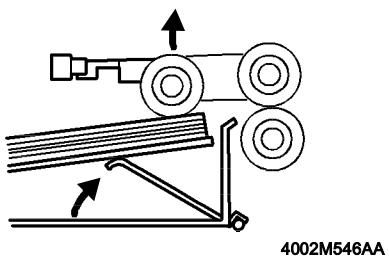
	CONTROL SIGNAL	Blocked	Unblocked	WIRING DIAGRAM
PC16 (1st Drawer)	PWB-A PJ4A-9B	H	L	27 - F
PC17 (2nd Drawer)	PWB-A PJ4A-15B	H	L	27 - F

### 13-3. Drawer Paper Lifting/Lowering Mechanism

The paper lifting mechanism employs the Lift-Up Motor that causes the paper stack loaded in the drawer to be pressed up against the Paper Take-Up Roll with a given pressure, thereby ensuring positive paper take-up.



**When the drawer is slid in**



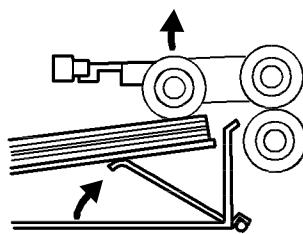
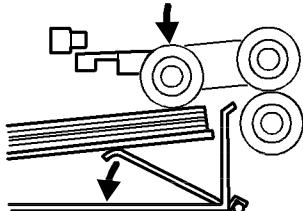
The Lift-Up Motor is energized.

The Paper Lifting Arm goes up.

The Lift-Up Sensor is blocked.

The Lift-Up Motor is deenergized.

**During a copy cycle**



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Paper is consumed.

The Paper Take-Up Roll lowers.

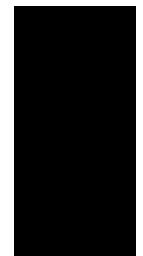
The Lift-Up Sensor is unblocked.

The Lift-Up Motor is energized.

The Paper Lifting Arm goes up.

The Lift-Up Sensor is blocked.

The Lift-Up Motor is deenergized.

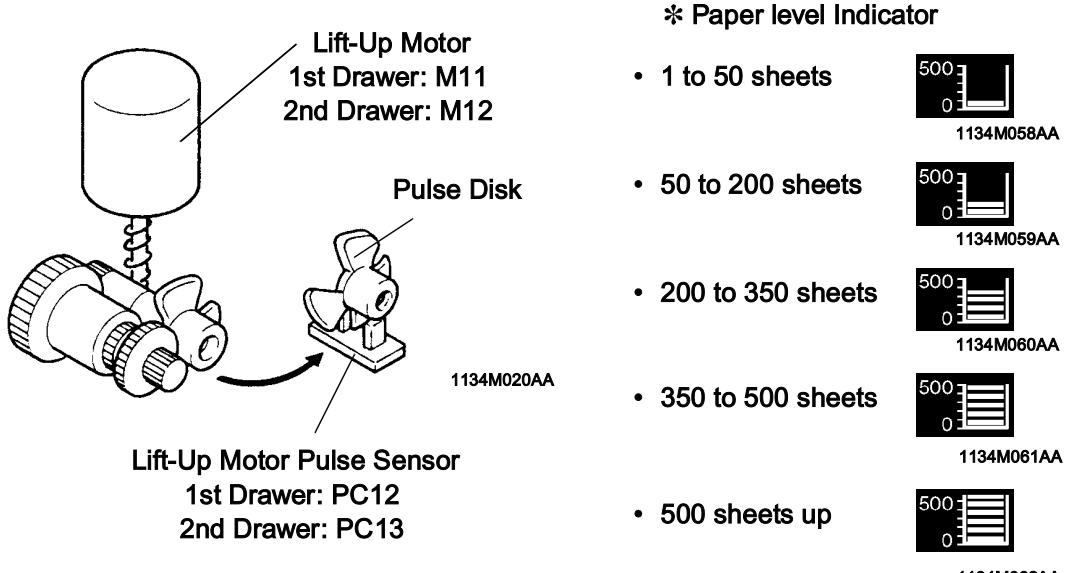
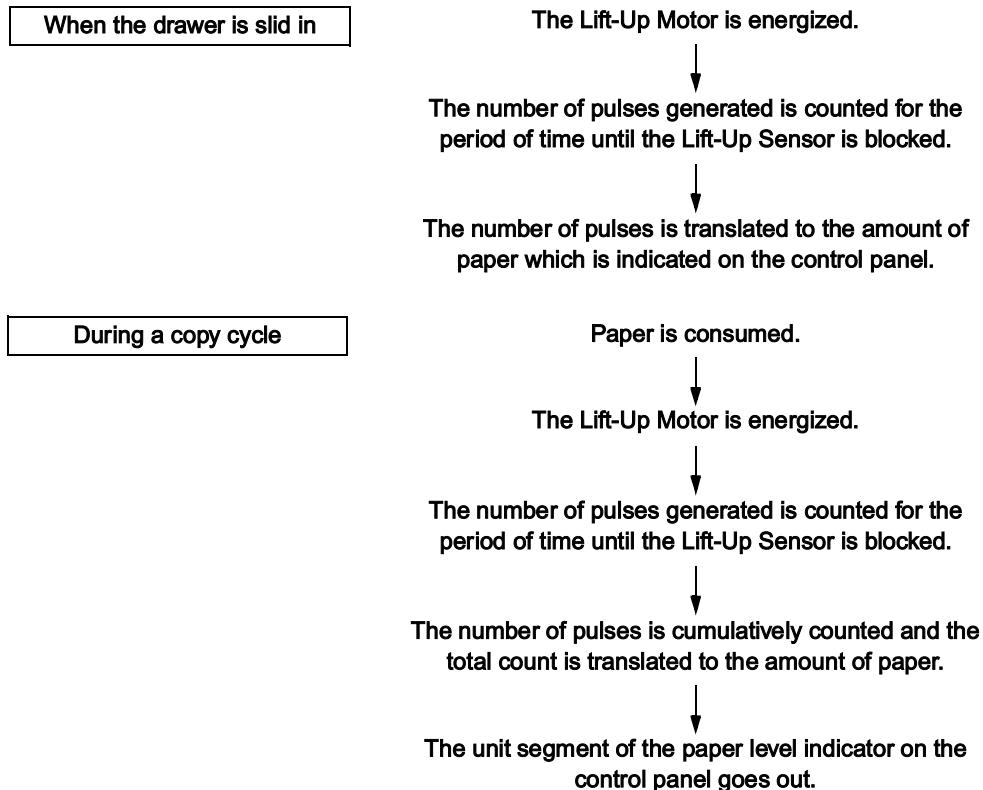


	CONTROL SIGNAL	Blocked	Unblocked	WIRING DIAGRAM
PC14 (1st Drawer)	PWB-A PJ4A-6B	H	L	27 - E
PC15 (2nd Drawer)	PWB-A PJ4A-12B	H	L	27 - F

	CONTROL SIGNAL	ON	OFF	WIRING DIAGRAM
M11 (1st Drawer)	PWB-A PJ3A-13A	H	L	27 - B
M12 (2nd Drawer)	PWB-A PJ3A-13B	H	L	27 - C

### 13-4. Paper Level Detection Mechanism

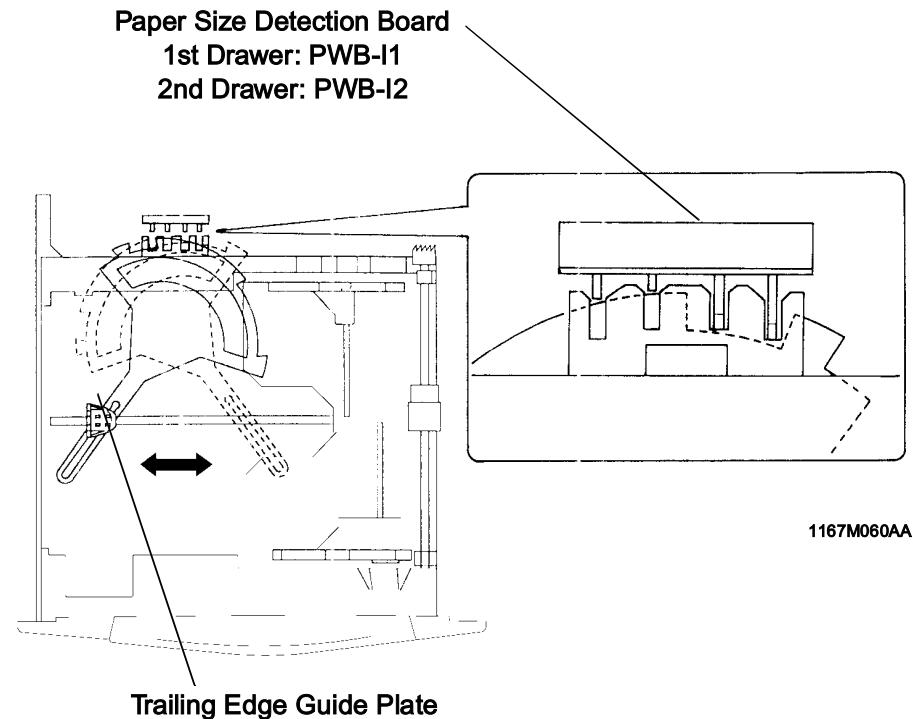
The amount of paper still available for use, or the paper level, of the drawer is detected by the Lift-Up Motor Pulse Sensor and a pulse disk. They function to detect the speed of the Lift-Up Motor.



	CONTROL SIGNAL	Blocked	Unblocked	WIRING DIAGRAM
PC12 (1st Drawer)	PWB-A PJ3A-11A	H	L	27 - E
PC13 (2nd Drawer)	PWB-A PJ3A-11B	H	L	27 - E

### 13-5. Universal Tray Paper Size Detection Mechanism

- Both the width (in the crosswise direction) and length (in the feeding direction) of the paper are detected and the copier CPU determines the paper size based on the combination of the two readings.



\* Details of paper Size Detecting Switches/Sensors Operation and Detectable Paper Sizes  
1st/2nd Drawer  
L/H: Either L or H is detected.

Paper Size Name	Inch Equivalent	Width × Length (mm)	Paper Size Detecting Switches					
			FD (PWB-I1, I2)				CD	
			FD1	FD2	FD3	FD4	PC23, 25	PC24, 26
A5L *1		148 × 210	L/H	H	H	H	L	L
B5L		182 × 257	H	H	L	H	L	L
B5C		257 × 182	L	L	H	H	H	L
A4L		210 × 297	H	L/H	L	L	L	H
A4C		297 × 210	L/H	H	H	H	H	L
B4L		257 × 364	L	L	L	H	H	L
A3L		297 × 420	L	L/H	L	L	H	L
Invoice L *2	5-1/2 × 8-1/2	140 × 216	L/H	H	H	H	L	L
LETTER L	8.5 × 11	216 × 279	L	H	H	L	L	H
LETTER C	11 × 8.5	279 × 216	H	H	H	H	H	H
11 × 14	11 × 14	279 × 356	L	L	L	H	H	H
11 × 17	11 × 17	279 × 432	L	H	L	L	H	H
LEAGAL L *3	8.5 × 14	216 × 356	L	L	L	H	L	H
G LETTER L *2	8 × 10.5	203 × 267	H	L	H	H	L	H

Paper Size Name	Inch Equivalent	Width × Length (mm)	Paper Size Detecting Switches					
			FD (PWB-I1, I2)				CD	
			FD1	FD2	FD3	FD4	PC23, 25	PC24, 26
G LETTER C	10.5 × 8	267 × 203	L	H	H	H	H	H
QUART L	10 × 8	254 × 203	H	H	L	H	L	H
Korea FLS *1		192 × 268	H	L	H	H	L	L/H
EXE L *2	7.25 × 10.5	184 × 267	H	L	H	H	L	L
EXE C	10.5 × 7.25	267 × 184	L	L	H	H	H	H
FLS *3	8 × 13	203 × 330	L	L	L	L	L	H
FOLIO *3		210 × 330	L	L	L	L	L	H
FOLIO *3		210 × 356	L	L	L	L	L	H
G LEAGAL L *3	8.5 × 13	216 × 330	L	L	L	L	L	H

Switch Operation L: OFF, H: ON

Sensor Operation L: Blocked, H: Unblocked

\*1: Metric areas

\*2: Inch areas

\*3: "Tech. Rep. Mode > System Input > Paper size Input" must be set for the paper size.

- 1st Drawer

	CONTROL SIGNAL	ON	OFF	WIRING DIAGRAM
PWB-I1 FD1	PWB-A PJ4A-1A	H	L	27 - H
PWB-I1 FD2	PWB-A PJ4A-2A	H	L	27 - H
PWB-I1 FD3	PWB-A PJ4A-3A	H	L	27 - H
PWB-I1 FD4	PWB-A PJ4A-4A	H	L	27 - H

	CONTROL SIGNAL	Blocked	Unblocked	WIRING DIAGRAM
PC23	PWB-A PJ12A-3A	H	L	27 - G
PC25	PWB-A PJ12A-9A	H	L	27 - G

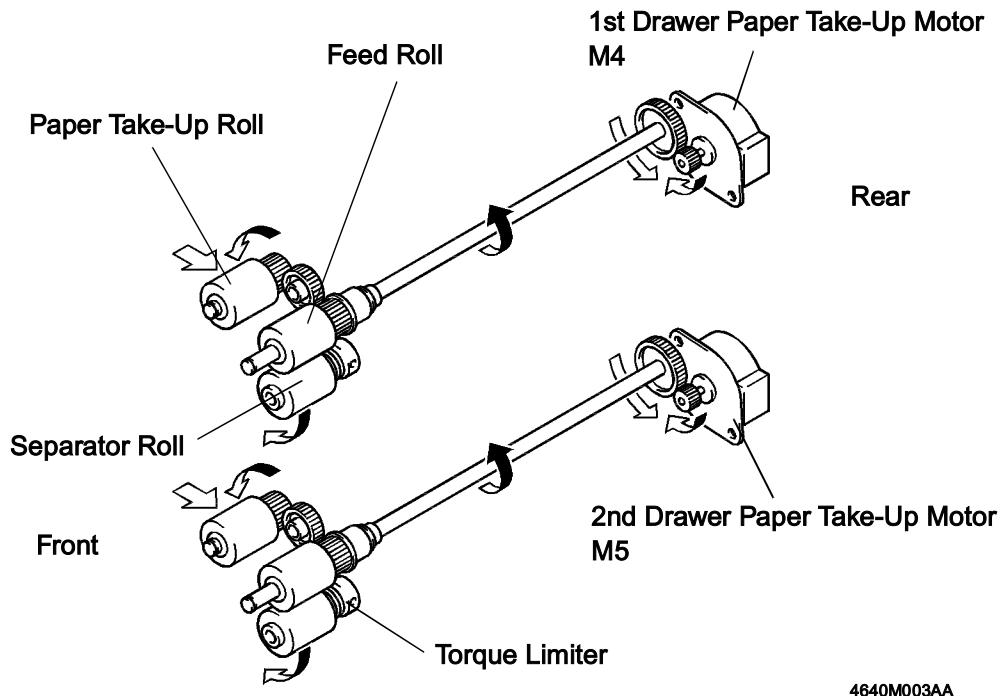
- 2nd Drawer

	CONTROL SIGNAL	ON	OFF	WIRING DIAGRAM
PWB-I2 FD1	PWB-A PJ4A-5A	H	L	27 - I
PWB-I2 FD2	PWB-A PJ4A-6A	H	L	27 - I
PWB-I2 FD3	PWB-A PJ4A-7A	H	L	27 - I
PWB-I2 FD4	PWB-A PJ4A-8A	H	L	27 - I

	CONTROL SIGNAL	Blocked	Unblocked	WIRING DIAGRAM
PC24	PWB-A PJ12A-6A	H	L	27 - G
PC26	PWB-A PJ12A-12A	H	L	27 - G

## 13-6. Paper Take Up Mechanism

Drive for the paper take-up sequence comes from a motor.

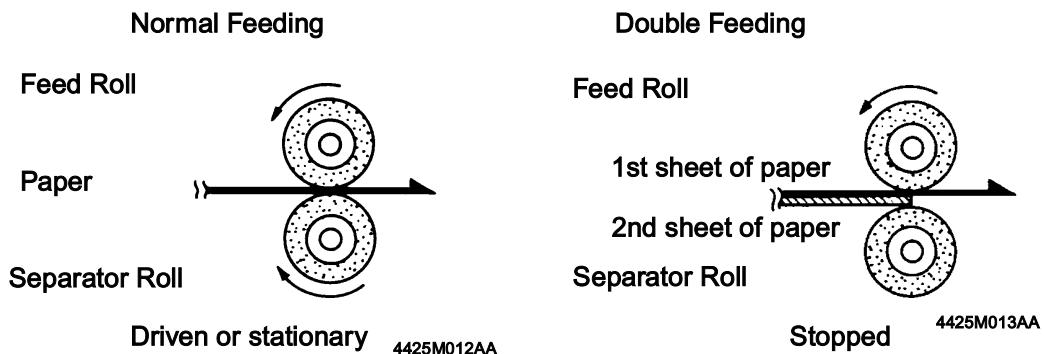


### (1) Paper Separating Mechanism

The difference in friction coefficient between the Feed Roll and Separator Roll is used to stop the rotation of the Separator Roll for the prevention of double feed.

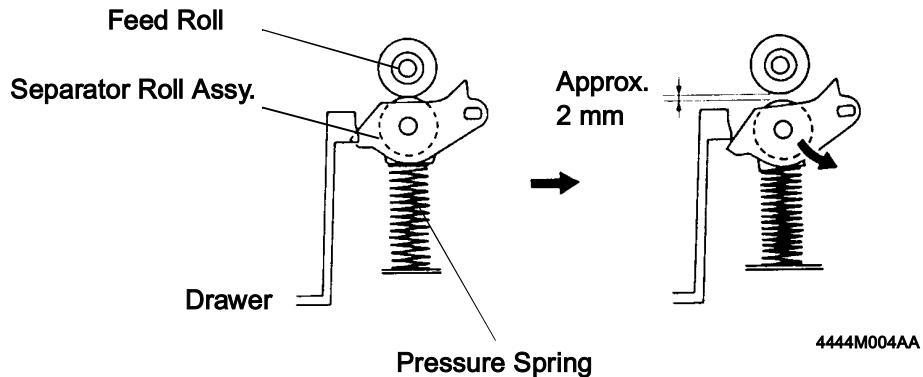
**Normal feeding:** When only one sheet of paper is taken up, the friction coefficient on the top side of the paper is equal to that on the underside. The Separator Roll is driven by the Feed Roll, which results in the paper being fed on.

**Double feeding:** Since the friction coefficient between the second sheet of paper and the Separator Roll is greater than that between the first and second sheets of paper, the Separator Roll remains stationary, allowing the Feed Roll to feed only the first sheet of paper.



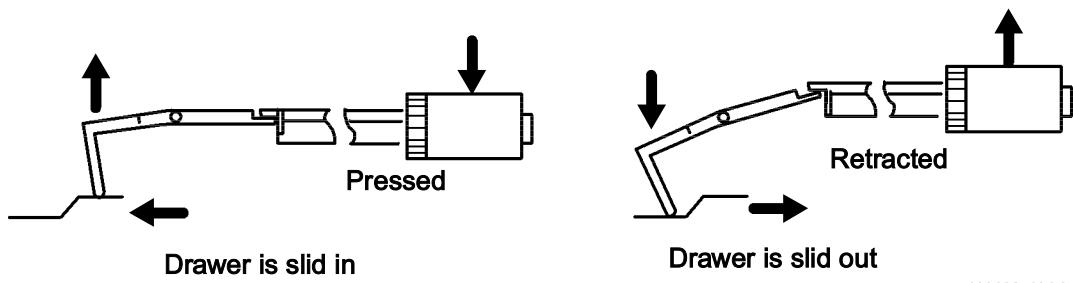
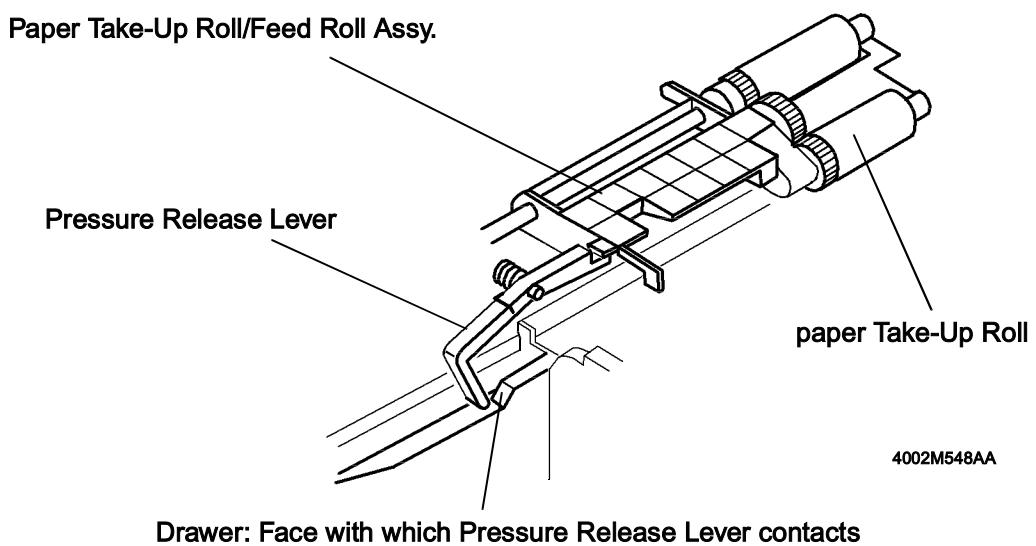
## (2) Paper Pressure Release Mechanism

When the drawer is pulled out of the copier, the Pressure Release Rail presses down the Separator Roll Assy, which results in the Separator Roll being disengaged from the Feed Roll.



## (3) Paper Take Up Roll Retracting Mechanism

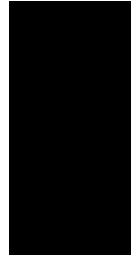
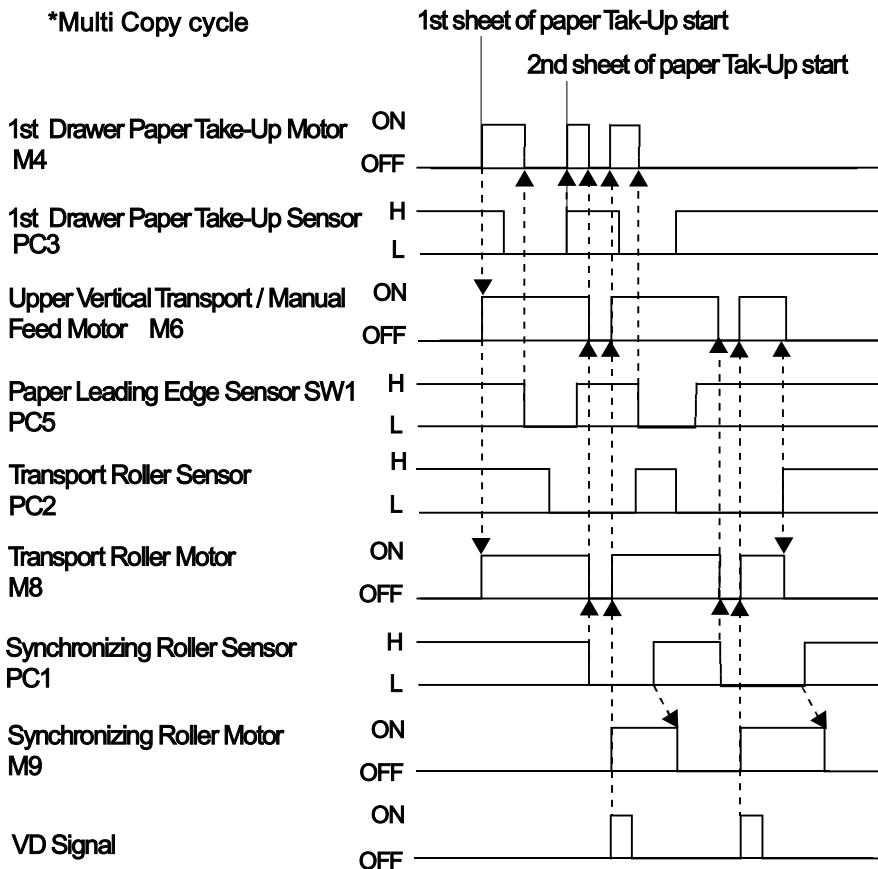
When the drawer is pulled out of the copier, the Pressure Release Lever pushes up the Paper Take-Up Roll/Feed Roll Assy, causing the Paper Take-Up Roll to retract from the paper stack.



## 13-7. Paper Take Up Control

### (1) Paper Take Up Motor Control

The Paper Take-Up Motor is controlled by the signal output from the Master Board.



	CONTROL SIGNAL	ON	OFF	WIRING DIAGRAM
M4 (1st Drawer)	PWB-A PJ5A-1A~3A	Pulse Output		27 - B
M5 (2nd Drawer)	PWB-A PJ5A-4A~6A	Pulse Output		27 - B

	CONTROL SIGNAL	Blocked	Unblocked	WIRING DIAGRAM
PC3 (1st Drawer)	PWB-A PJ3A-6A	H	L	27 - C
PC4 (2nd Drawer)	PWB-A PJ3A-6B	H	L	27 - C

### (2) Paper Take Up Retry Control

To minimize the occurrence of a paper misfeed, the paper take-up sequence is temporarily halted if the paper fails to reach the Paper Take-Up Detecting Sensor within a given period of time after the sequence has been started. The paper take-up sequence is then performed again. These paper take-up sequences are repeated a given number of times.

	No. of Paper Take-Up Retry Sequences
Paper Take-Up Retry	3

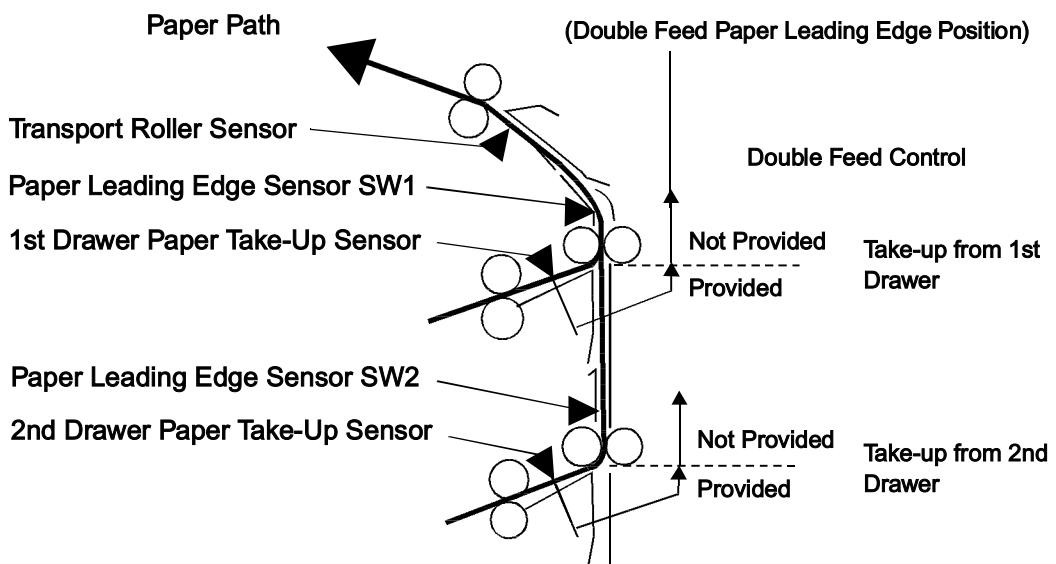
### (3) Paper Take Up Interval Control

To minimize the occurrence of a paper misfeed due to improper paper separation, the paper take-up sequence is temporarily halted if the paper fails to reach the Paper Take-Up Detecting Sensor within a given period of time after the sequence has been started. After another given period of time, the paper take-up sequence is performed a second time, thereby ensuring a good interval between two paper take-up sequences.

### (4) Double Feed Paper Take Up Control

If double feed has not occurred, the copier starts the paper take-up sequence for the subsequent sheet of paper as soon as the Paper Take-Up Sensor is deactivated.

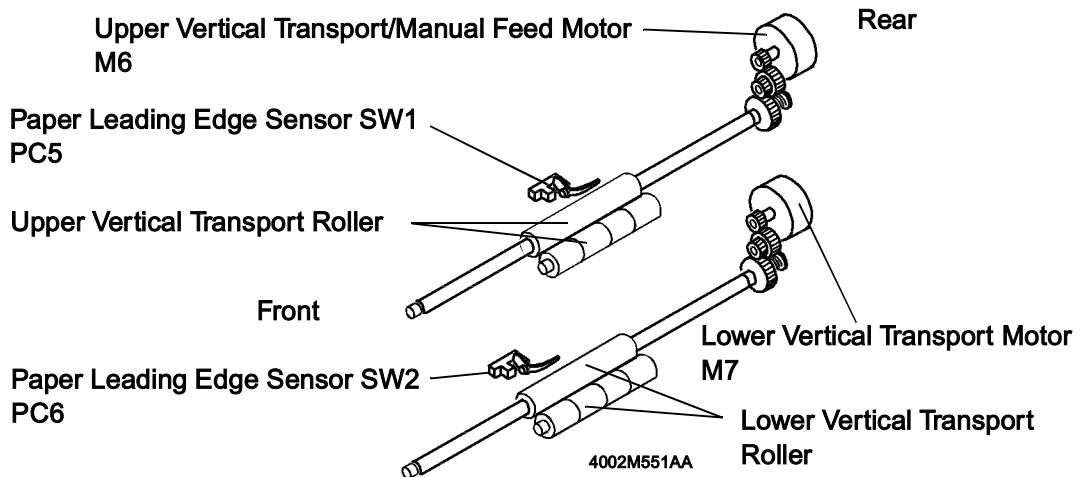
If double feed occurs, the Paper Take-Up Sensor is not deactivated. In this case, the copier starts the paper take-up sequence for the subsequent sheet of paper when the Paper Leading Edge Sensor is deactivated.



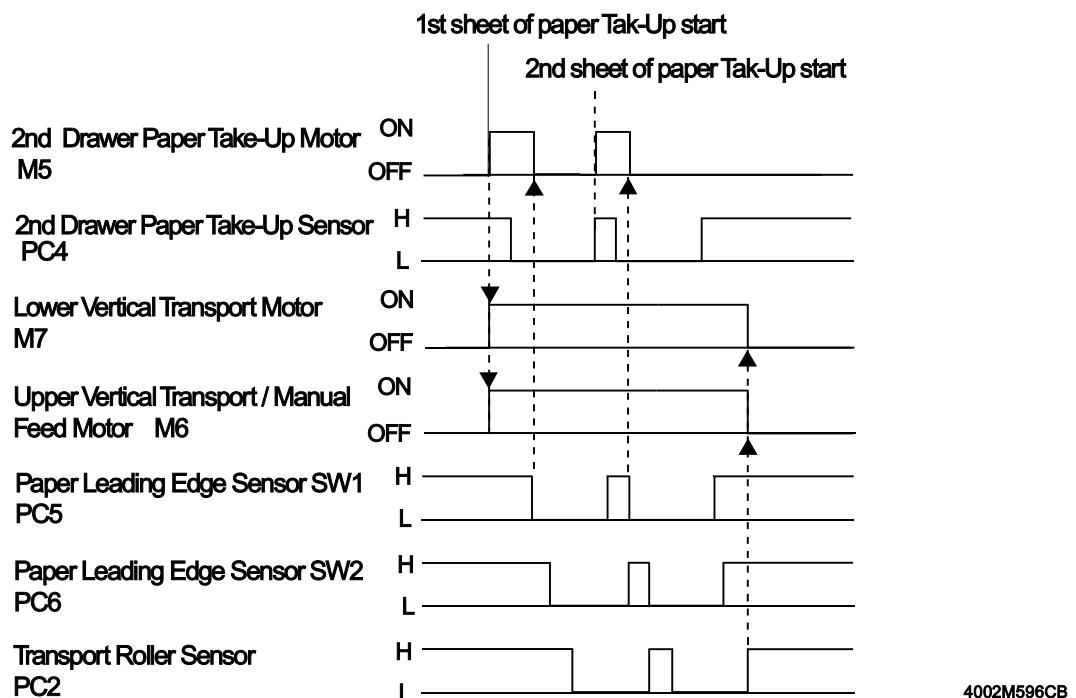
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### 13-8. Vertical Transport Drive Mechanism

A motor drives the Vertical Transport Rollers.



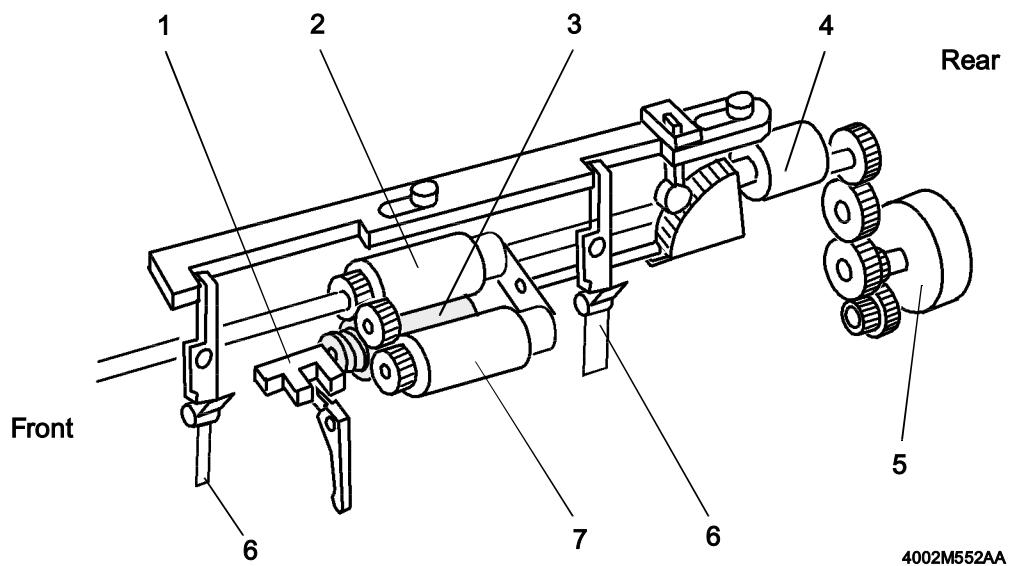
\* For details of the 1st Drawer control, see 13-7. "Paper Take Up Control".



	CONTROL SIGNAL	ON	OFF	WIRING DIAGRAM
M6	PWB-A PJ5A-7A~9A	Pulse Output		7 - C
M7	PWB-A PJ5A-1B~3B	Pulse Output		7 - C

	CONTROL SIGNAL	Blocked	Unblocked	WIRING DIAGRAM
PC5	PWB-A PJ3A-3A	H	L	7 - B
PC6	PWB-A PJ3A-3B	H	L	7 - B

## 14. MANUAL FEED TABLE SECTION

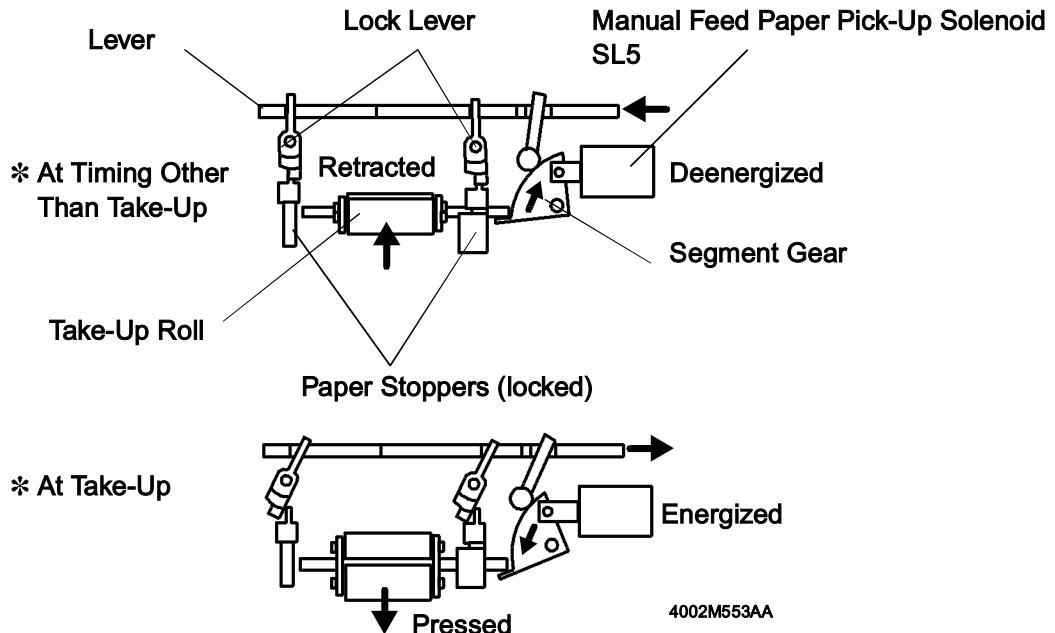


- |  |   |
|--|---|
| 1. Manual Feed Paper Empty Sensor<br>PC18    | 5. Upper Vertical Transport/Manual Feed<br>Motor M6 |
| 2. Manual Bypass Feed Roll                   | 6. Paper Stopper                                    |
| 3. Manual Bypass Separator Roll              | 7. Manual Bypass Take-Up Roll                       |
| 4. Manual Feed Paper Pick-Up Solenoid<br>SL5 |   |

## 14-1. Manual Take Up Roll Pressure Mechanism

The Multi/Manual Bypass Take-Up Roll is raised and lowered by energizing and deenergizing the solenoid.

	Solenoid	Take-Up Roll Position	Paper Stoppers
At take-up	Deenergized	Down	Free
At timings other than take-up	Energized	Up	Locked



## 14-2. Manual Feed Paper Separating Mechanism

The difference in friction coefficient between the Feed Roll and Separator Roll is used to stop the rotation of the Separator Roll for the prevention of double feed.

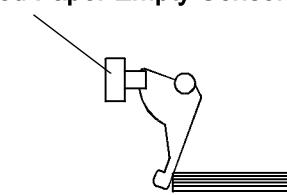
\* For details of the Paper Separating Mechanism, see 13-6. (1) "Paper Separating Mechanism".

### 14-3. Manual Feed Paper Empty Detection Mechanism

The Multi/Manual Bypass Paper Empty Sensor detects a sheet of paper on the Multi/Manual Bypass Table.

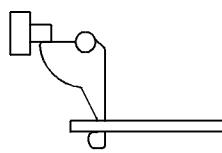
Manual Feed Paper Empty Sensor

PC18



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When Paper is Placed

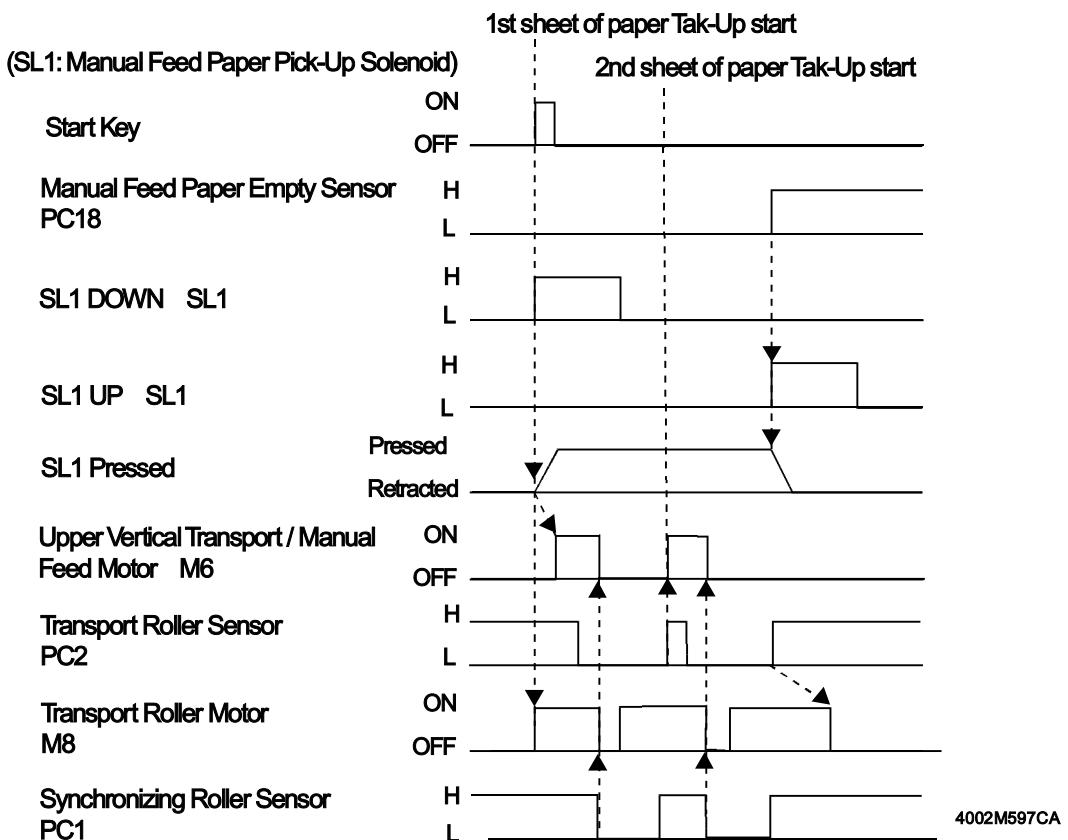


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When No Paper is Placed

	CONTROL SIGNAL	Blocked	Unblocked	WIRING DIAGRAM
PC18	PWB-A PJ2A-3	L	H	24 - I

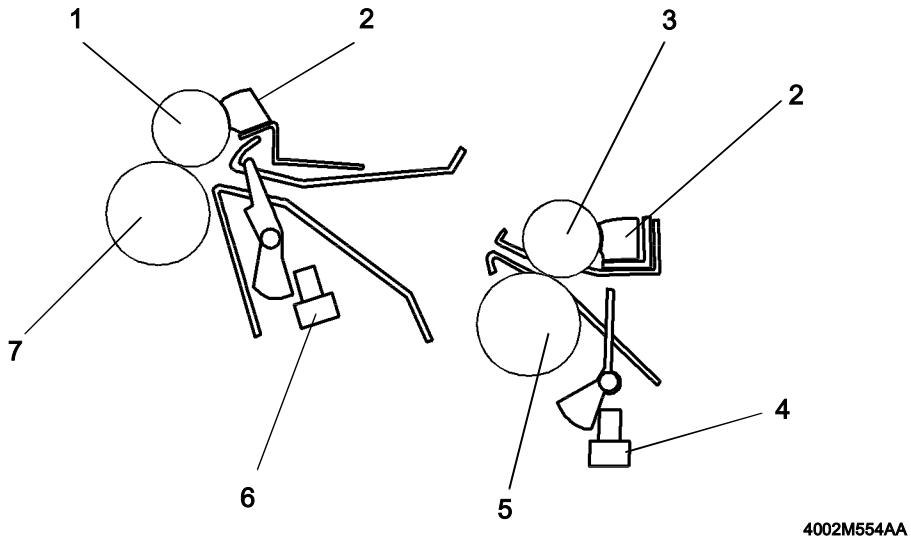
### 14-4. Manual Feed Take Up Control



	CONTROL SIGNAL	ON	OFF	WIRING DIAGRAM
M6	PWB-A PJ5A-7A~9A	Pulse Output		7 - C
SL5 Down	PWB-A PJ2A-5	L	H	24 - I
SL5 UP	PWB-A PJ2A-6	L	H	24 - I

## 15. TRANSPORT/SYNCHRONIZING ROLLERS SECTION

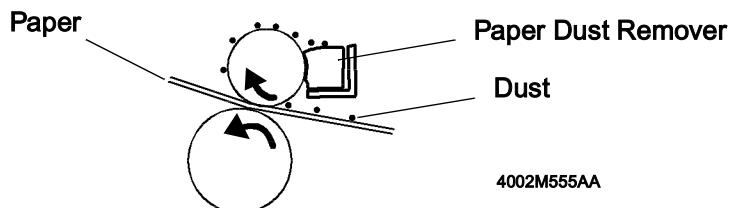
The Synchronizing Rollers are turned in time with the optical section (Scanner) and transport section (paper).



- 1. Upper Synchronizing Roller
- 2. Paper Dust Remover
- 3. Upper Transport Roller
- 4. Transport Roller Sensor  
PC2
- 5. Lower Transport Roller
- 6. Paper Leading Edge Sensor  
PC1
- 7. Lower Synchronizing Roller

### 15-1. Paper Dust Remover

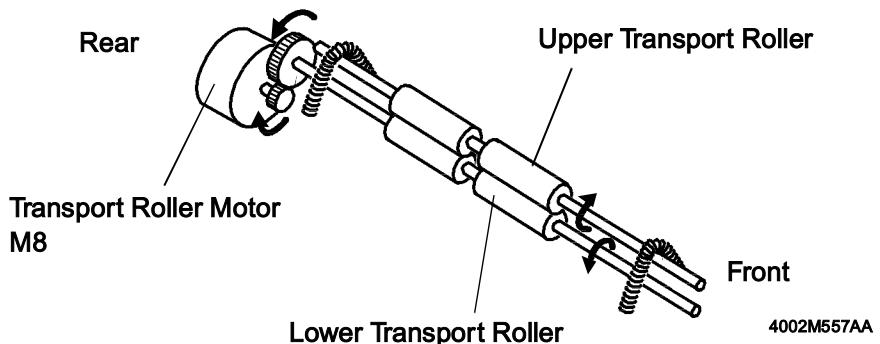
Triboelectric charges generated on the roller attract paper dust from the paper and the dust is then transferred onto the Paper Dust Remover.



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## 15-2. Transport Roller Drive Mechanism

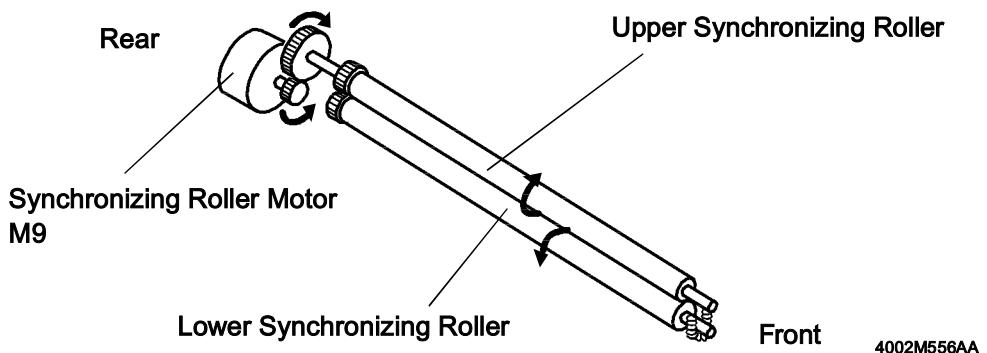
The Transport Roller is driven by a motor.



	CONTROL SIGNAL	ON	OFF	WIRING DIAGRAM
M8	PWB-A PJ5A-4B~6B	Pulse Output		7 - C

## 15-3. Synchronizing Roller Drive Mechanism

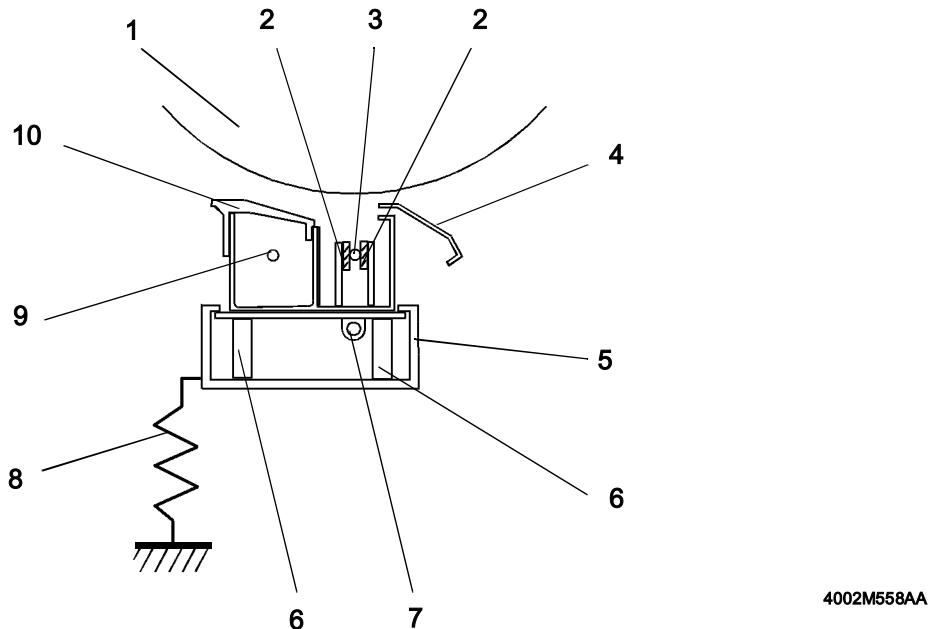
The Synchronizing Roller is driven by a motor.



	CONTROL SIGNAL	ON	OFF	WIRING DIAGRAM
M9	PWB-A PJ5A-7B~9B	Pulse Output		7 - D

## 16. IMAGE TRANSFER AND PAPER SEPARATION SECTION

- The DC corona emission applied by the Image Transfer Corona attracts the toner image formed on the surface of the PC Drum onto the surface of the paper, forming a visible, developed image of the original.
- The AC corona emission applied by the Paper Separator Corona weakens electrostatic attraction between the paper and PC Drum.
- The PC Drum Paper Separator Fingers physically peel paper off the surface of the PC Drum.



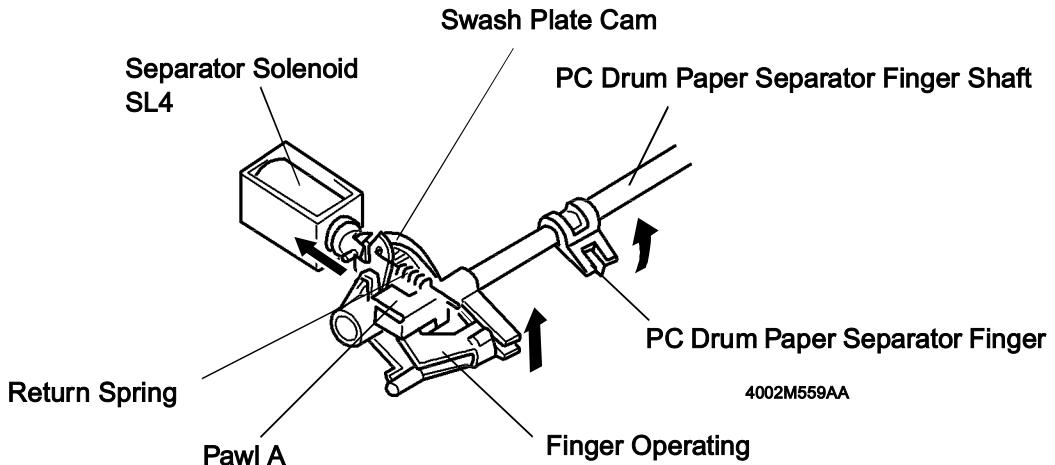
- |   |   |
|---|---|
| 1. PC Drum  | 7. Image Transfer Corona Wire Cleaner Lever |
| 2. Image Transfer Corona Wire Cleaner                 | 8. Resistor                                 |
| 3. Image Transfer Corona Wire                         | 9. Paper Separator Corona Wire              |
| 4. Pre-Image Transfer Guide Plate                     | 10. Guide                                   |
| 5. Image Transfer/Paper Separator Coronas Unit Rail   |   |
| 6. Image Transfer/Paper Separator Coronas Unit Spring |   |

	CONTROL SIGNAL	ON	OFF	WIRING DIAGRAM
Image Transfer	PWB-A PJ12A-7B	L	H	5 - F
Paper Separator	PWB-A PJ12A-6A	L	H	5 - F

## 16-1. PC Drum Paper Separator Fingers Section

### (1) Finger Pressing Detection Mechanism

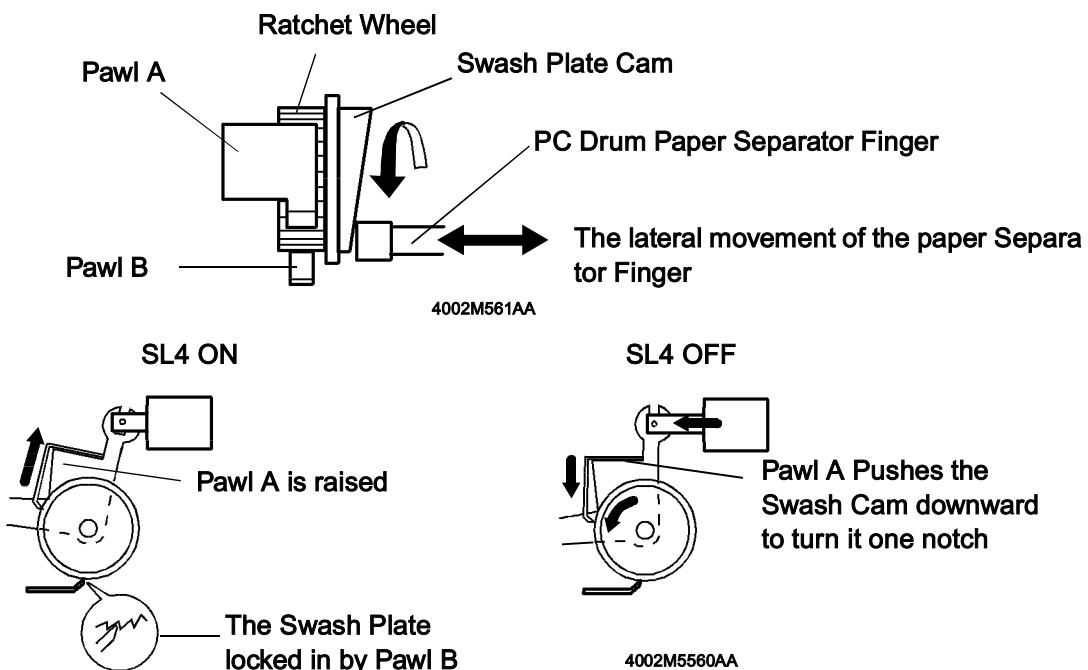
- The PC Drum Paper Separator Fingers are pressed against the surface of the PC Drum to properly separate paper from the surface of the PC Drum.
- This motion is done by the Separator Finger Solenoid.



	CONTROL SIGNAL	ON	OFF	WIRING DIAGRAM
SL4	PWB-A PJ7A-4B	L	H	4 - D

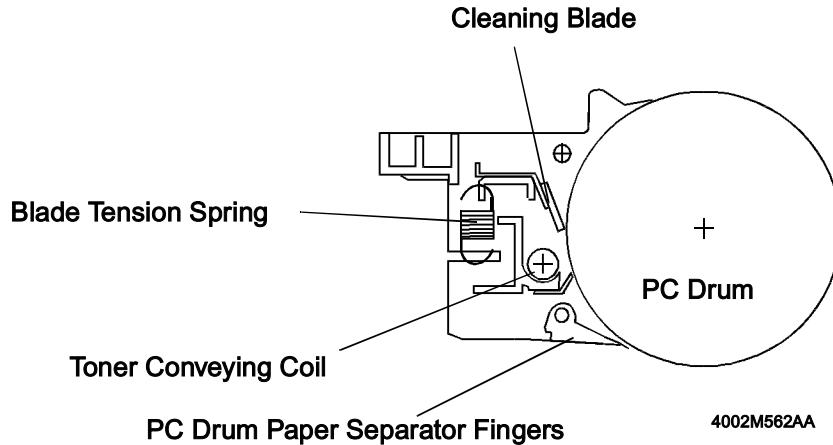
### (2) Finger Back and Forth Detection Mechanism

The PC Drum Paper Separator Fingers are moved in the crosswise direction to reduce damage to the PC Drum.



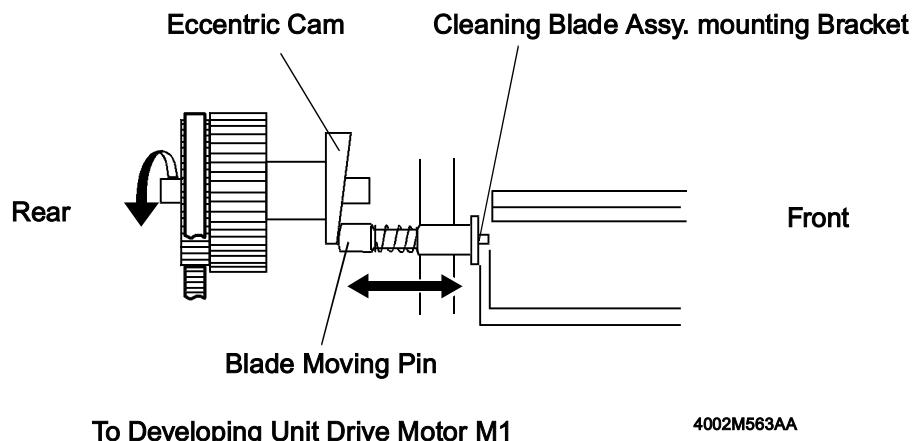
## 17. PC DRUM CLEANING SECTION

- The Cleaning Blade scrapes off any toner remaining on the surface of the PC Drum.
- The PC Drum Paper Separator Fingers physically separate paper from the surface of the PC Drum.



### 17-1. Cleaning Blade Moving Mechanism

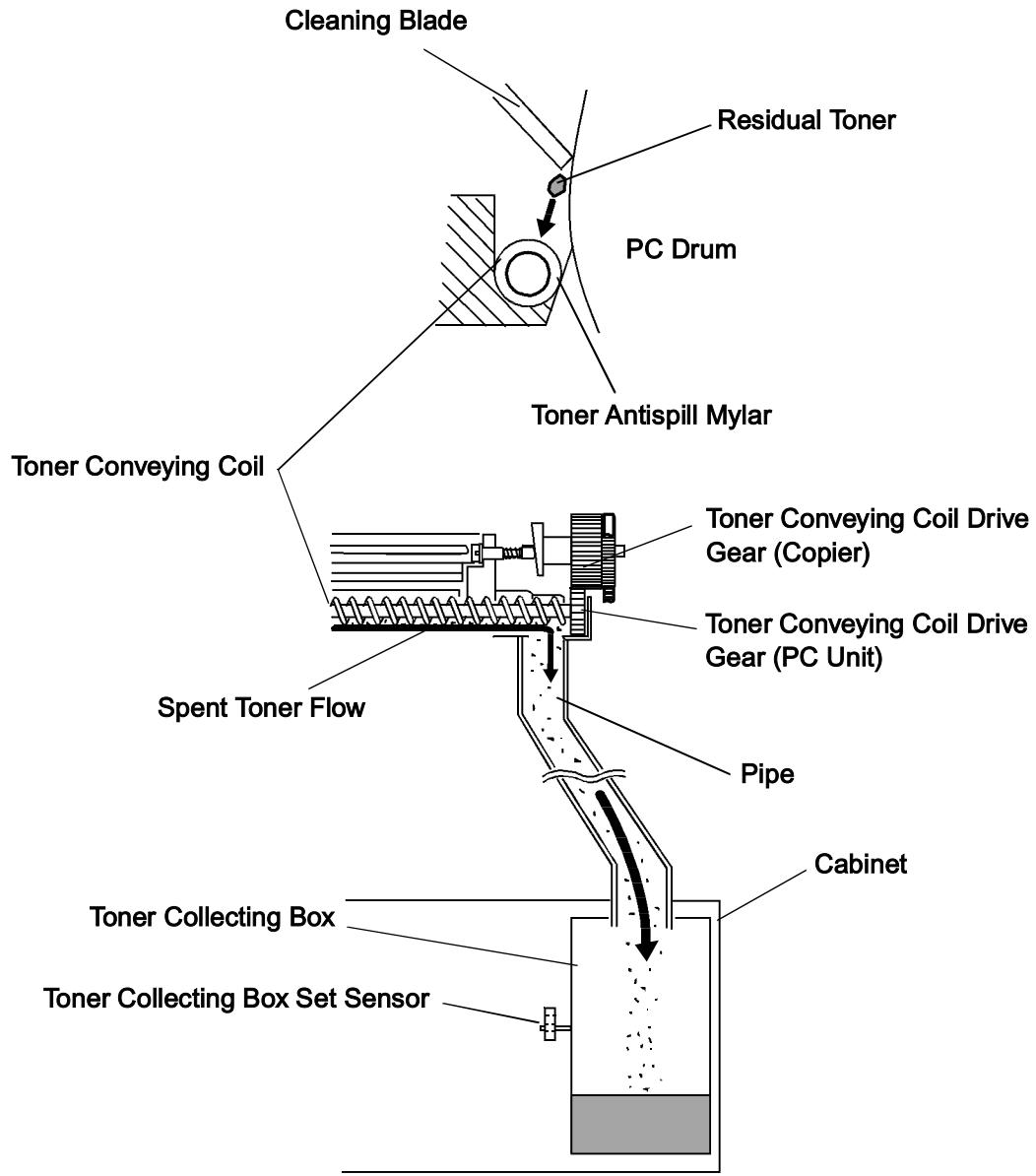
- The Cleaning Blade is moved back and forth while the PC Drum is turning to ensure that all residual toner is scraped cleanly off the surface of the PC Drum, thereby preventing the PC Drum as well as Cleaning Blade from deteriorating.
- Drive from a motor turns the Lateral Movement Cam, which results in the Cleaning Blade being moved back and forth.



To Developing Unit Drive Motor M1

## 17-2. Toner Conveying/Collecting Mechanism

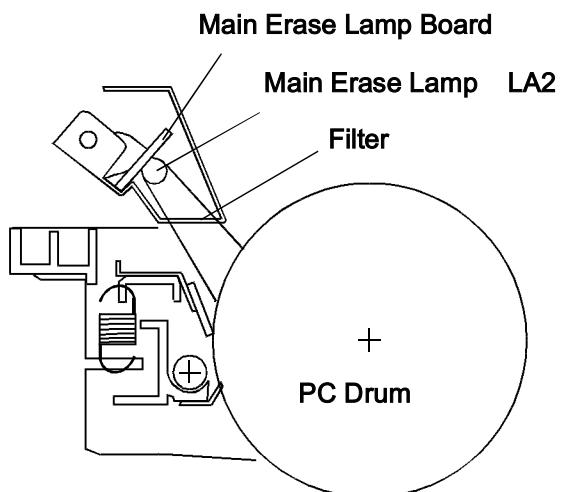
- The toner, which has been scraped off the surface of the PC Drum by the Cleaning Blade, is conveyed by the Toner Conveying Coil and dropped into the Toner Collecting Bottle.
- The Toner Conveying Coil is driven by a motor.



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## 18. MAIN ERASE SECTION

The light from the Main Erase Lamp neutralizes any surface potential remaining on the surface of the PC Drum after cleaning.



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	CONTROL SIGNAL	ON	OFF	WIRING DIAGRAM
LA2	PWB-A PJ9A-7A	L	H	4 - E

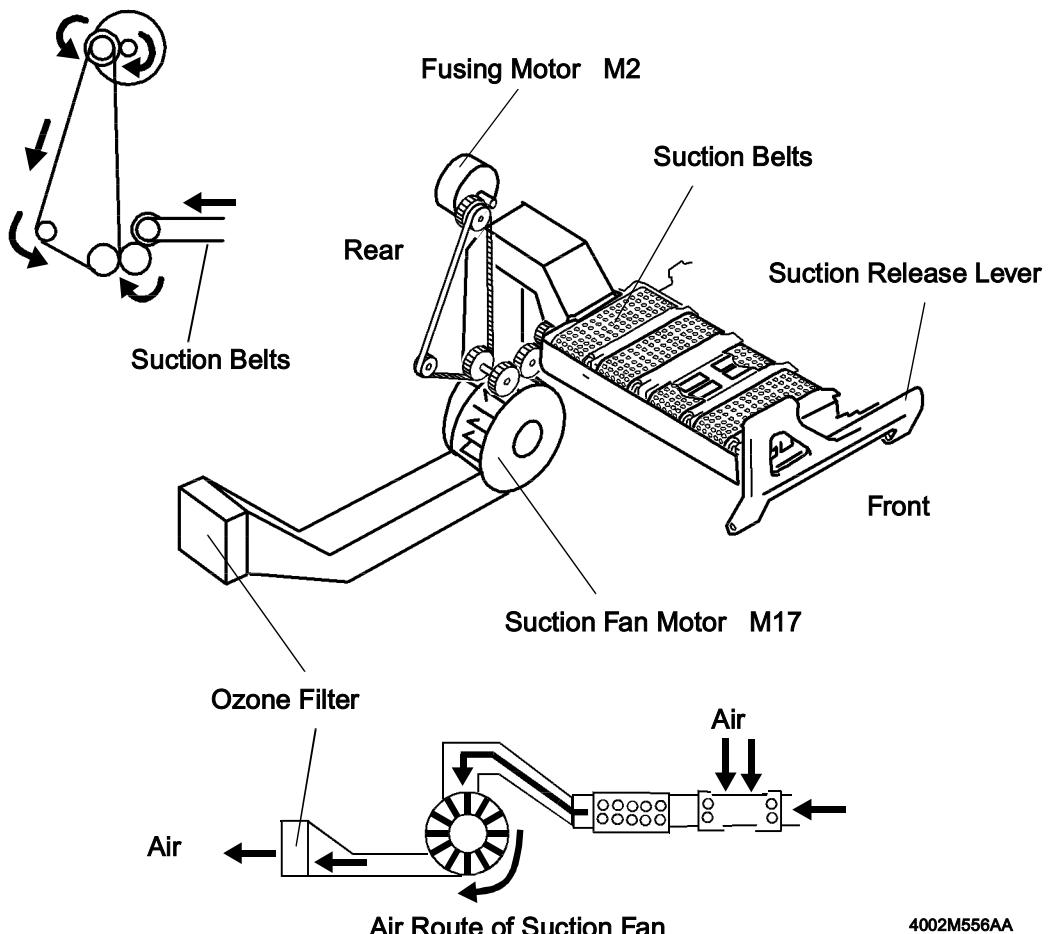
## 19. TRANSPORT SECTION

- Rotation of the Suction Fan Motor results in the paper separated from the PC Drum being drawn onto the turning Suction Belts.
- The Suction Belts are driven by a motor.

Speed Control	Plugged In*	Wait	Copy	JAM	Trouble	Front Door open	pre-Heat
M17	stop	Half	Full	stop	stop	stop	Half

\* Plugged in: Where Sleep or Auto Shut OFF is activated

Suction Roller Drive Mechanism



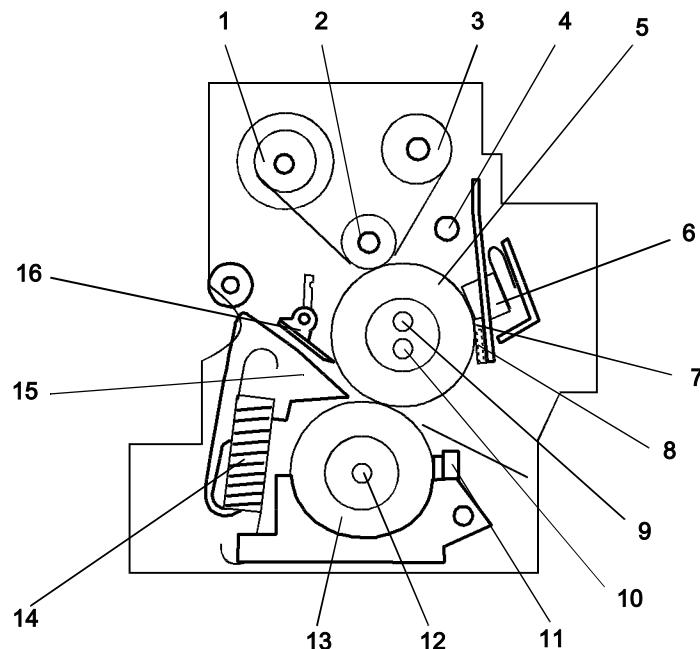
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	CONTROL SIGNAL	ON	OFF	WIRING DIAGRAM
M2	PWB-A PJ7A-1A	L	H	1 - C
M17	PWB-A PJ13A-2B	H	L	7 - D

\* As Suction Fan Motor Turns, ozone produced by the Image Transfer/Paper Separator Coronas is absorbed by the ozone Filter from the air being drawn out of the copier.

## 20. FUSING SECTION

The Fusing Unit fixes permanently the developed image to the paper by applying heat and pressure to the toner and paper.

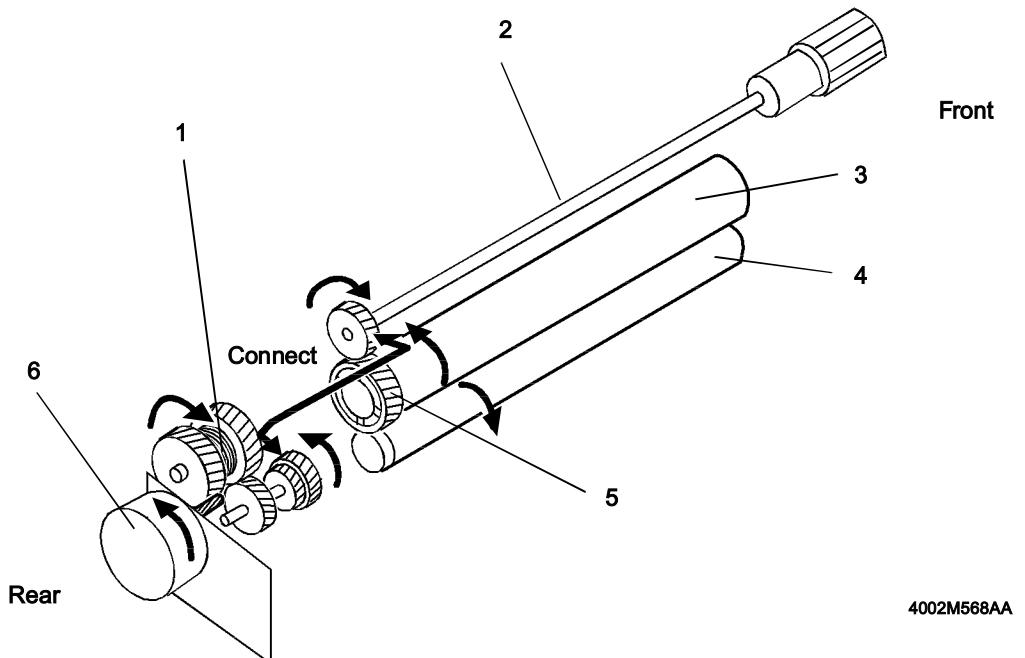


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- |  |  |
|--|--|
| 1. Web Take-Up Roller                    | 12. Lower Fusing Roller Heater Lamp (H2) |
| 2. Oil Supply/Web Feeding Roller         | 13. Lower Fusing Roller                  |
| 3. Web Roller                            | 14. Fusing Roller Pressure Spring        |
| 4. Misfeed Clearing Knob Shaft           | 15. Lower Paper Separator Finger         |
| 5. Upper Fusing Roller                   | 16. Upper Paper Separator Finger         |
| 6. Upper Fusing Roller Thermostat (TS1)  |  |
| 7. Upper Fusing Roller Thermistor (TH1)  |  |
| 8. Fusing Roller Sub Thermistor (TH3)    |  |
| 9. Fusing Roller Sub Heater Lamp (H5)    |  |
| 10. Upper Fusing Roller Heater Lamp (H1) |  |
| 11. Lower Fusing Roller Thermistor (TH2) |  |

## 20-1. Fusing Unit Drive Mechanism

A motor is provided for driving the Fusing Unit.

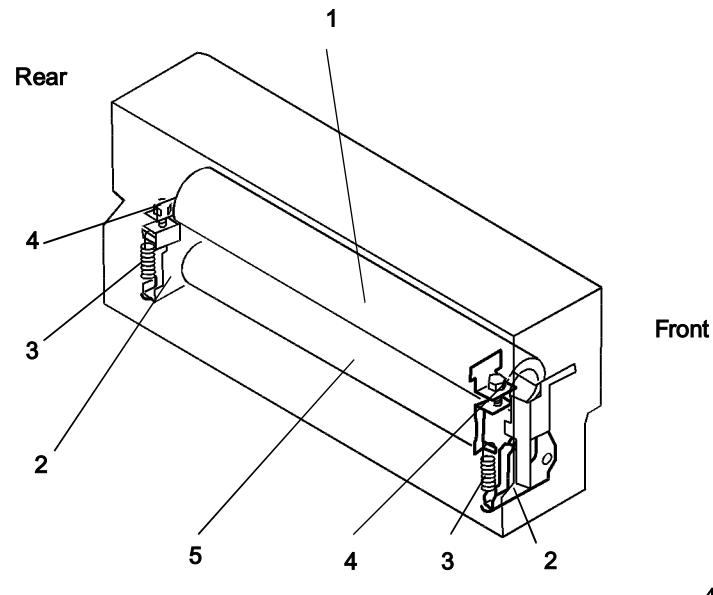


- |                                |                                   |
|--------------------------------|-----------------------------------|
| 1. Clutch Spring               | 5. Upper Fusing Roller Drive Gear |
| 2. Misfeed Clearing Knob Shaft | 6. Fusing Motor (M2)              |
| 3. Upper Fusing Roller         |                                   |
| 4. Lower Fusing Roller         |                                   |

CONTROLLED PART	CONTROL SIGNAL	ON	OFF	WIRING DIAGRAM
M2	PWB-A PJ7A-1A	L	H	1-C

## **20-2. Fusing Rollers Pressure Mechanism**

To ensure that there is a certain width of area of contact (nip) between the Upper and Lower Fusing Rollers, pressure springs are installed to press the Lower Fusing Roller up against the Upper Fusing Roller.



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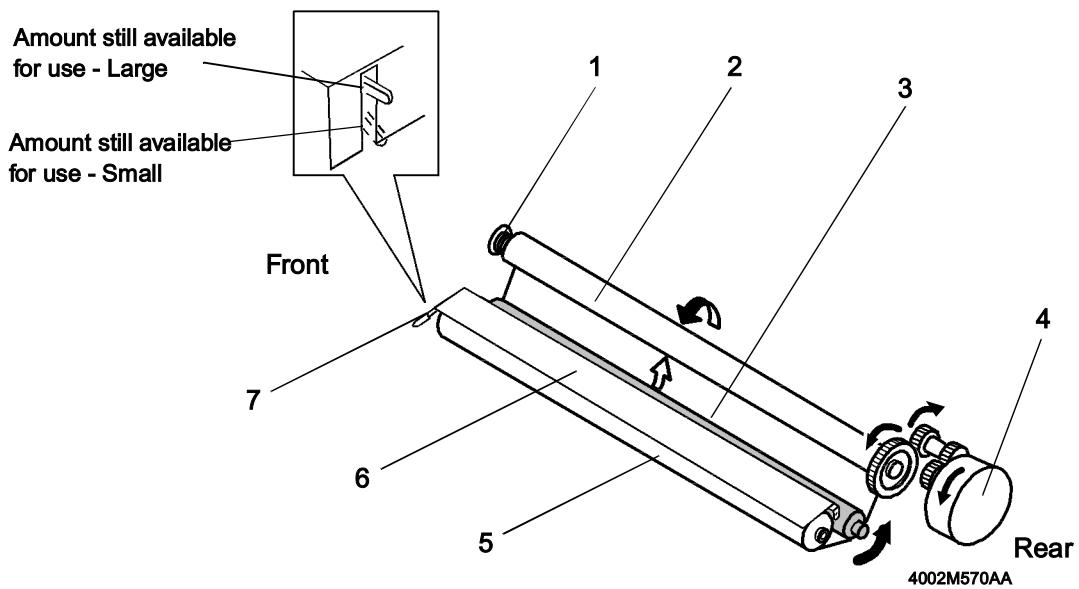
- 1. Upper Fusing Roller
- 2. Pressure Holder
- 3. Pressure Spring
- 4. Pressure Screw
- 5. Lower Fusing Roller

## 20-3. Fusing Roller Cleaning Mechanism

### Cleaning Web Take-Up Mechanism

- The Cleaning Web is taken up by the Web Take-Up Roller which is driven by the Cleaning Web Drive Motor (M24).
- The Cleaning Web Drive Motor turns one turn in every 7 to 14 copies made to take up the Cleaning Web.
- \* The length of the Cleaning Web taken up per one revolution of the motor varies depending on the amount of Cleaning Web that has already been taken up. More specifically, in the beginnings of a new roll of Cleaning Web, a shorter length of web is taken up per one revolution of the motor, as there is very little amount of web taken up by the Web Take-Up Roller. The more the web is taken up, the longer the length of web taken up. The copier therefore refers to the count of the ÅgWeb RollerÅh counter and turns the motor one turn, in the beginnings, for every 7 copies made and, at the last stage, for every 14 copies made. It thereby ensures that a given amount of web is taken up for each copy.
- The Web Take-Up Roller shaft is provided with a clutch spring that prevents the roller from turning backward. This prevents the Cleaning Web from developing slack or wrinkling during take-up. This arrangement gives a given tension to the web.
- There is a gage provided showing an approximate amount of Cleaning Web still available for use.

Checking the Amount of Cleaning Web Still Available for Use:



- |                                   |                         |
|-----------------------------------|-------------------------|
| 1. Clutch Spring                  | 6. Web Regulating Plate |
| 2. Web Take-Up Roller             | 7. Gage                 |
| 3. Oil Supply/Web Feeding Roller  |                         |
| 4. Cleaning Web Drive Motor (M24) |                         |
| 5. Web Roller                     |                         |

CONTROLLED PART	CONTROL SIGNAL	ON	OFF	WIRING DIAGRAM
M24	PWB-A PJ7A-15A	L	H	1-D

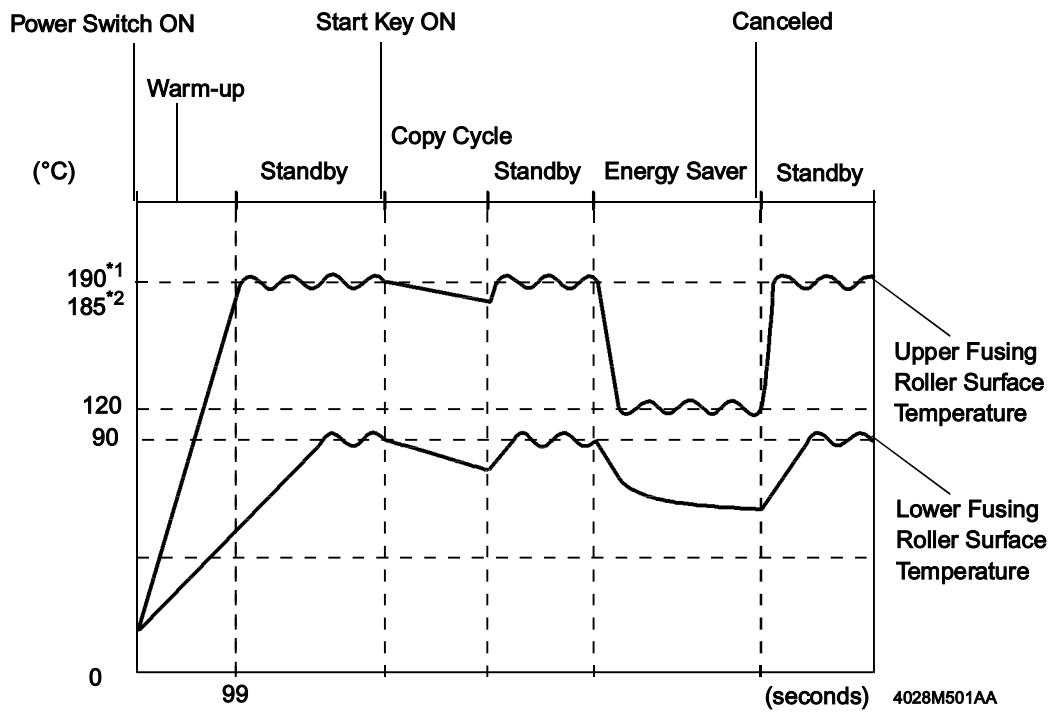
## 20-4. Fusing Temperature Control

- The Fusing Roller Heater Lamp is turned ON and OFF to keep a set temperature on the surface of the Fusing Roller.
- The surface temperature of the Fusing Roller is detected by using a thermistor that translates a detected temperature to a corresponding electrical signal.
- If the Fusing Roller temperature becomes excessively high, the Fusing Roller Heater Lamp is shut down.
- The Lower Fusing Roller Heater Lamp is not turned ON during a copy cycle and a warm-up cycle. During a warm-up cycle, both the Upper Fusing Roller Heater Lamp and the Fusing Roller Sub Heater Lamp are turned ON at the same time.
- The temperature for fusing temperature control can be selected from among three options (180, 190, and 200 °C) by using a Tech. Rep. Choice function.

Part Name	Symbol	Function	Control Temperature
Upper Fusing Roller Heater Lamp	H1	ON during a warm-up cycle, standby state, and a copy cycle, and when the Energy Saver mode is canceled.	-
Lower Fusing Roller Heater Lamp	H2	ON during a standby state	-
Fusing Roller Sub Heater Lamp	H5	ON during a warm-up cycle and the Energy Saver mode, and when the Energy Saver mode is canceled.	-
Upper Fusing Roller Thermostat	TS1	Detects the surface temperature of the Upper Fusing Roller that has become inordinately high.	210 °C
Upper Fusing Roller Thermistor	TH1	Detects the surface temperature of the Upper Fusing Roller.	190°C <sup>*1</sup> 185°C <sup>*2</sup>
Lower Fusing Roller Thermistor	TH2	Detects the surface temperature of the Lower Fusing Roller.	90 °C
Fusing Roller Sub Thermistor	TH3	Detects the surface temperature of the Upper Fusing Roller only in the Energy Saver mode.	120°C

\* 1: 120-127V eria

\* 2: 220-240V eria



CONTROLLED PART	CONTROL SIGNAL	ON	OFF	WIRING DIAGRAM
H1	PWB-A PJ7A-8A	L	H	1-A
H2	PWB-A PJ7A-11A	L	H	1-C
H5	PWB-A PJ7A-11A	L	H	1-C
TH1	PWB-A PJ7A-9A	Analog Input		1-B
TH2	PWB-A PJ7A-12A	Analog Input		1-B
TH3	PWB-A PJ20A-1	Analog Input		1-B

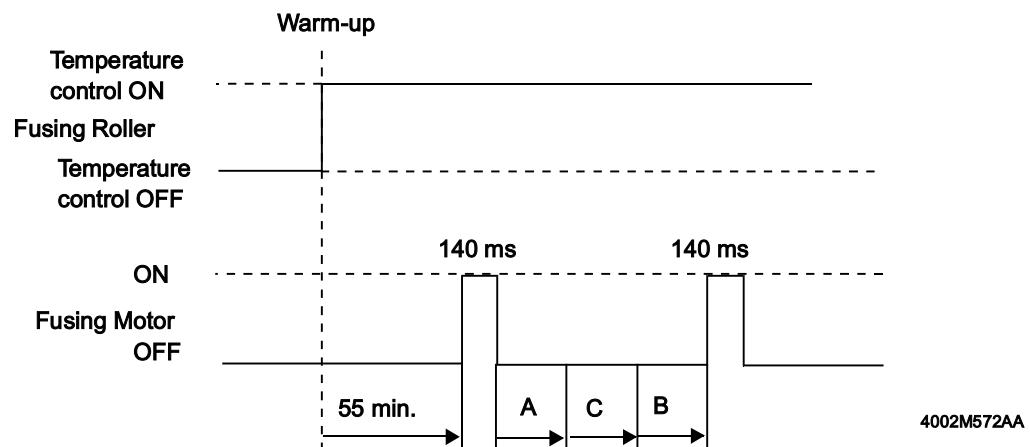
\* 1: 120-to-127-V areas

\* 2: 220-to-240-V areas

## 20-5. Control of Fusing Roller Small-Amount Turning

- If the Fusing Rollers remain stationary for more than 60 minutes with the temperature control kept active, heat and pressure deform the nips of the two rollers. To prevent this situation, the motor is automatically energized once in a given period of time to turn the rollers 1/4 turns.
- The motor is energized once when the cumulative period of time counted, through which the motor remains deenergized, reaches a predetermined value.

	Cumulative Period of Time Counted
Motor Driven	55 minutes



**A + B = 55 minutes**

C: The period of time over which the Front Door Interlock Switch is turned OFF and ON, a malfunction condition continues, Energy Saver mode lasts, or the Predrive OFF Rear Sensor is deactivated and activated.

## 20-6. CPM Control

The CPM (copies/minute) control is provided to keep good fusing performance even in multi-copy cycles and with the system power sourced from a single power outlet.

### 1. Overview

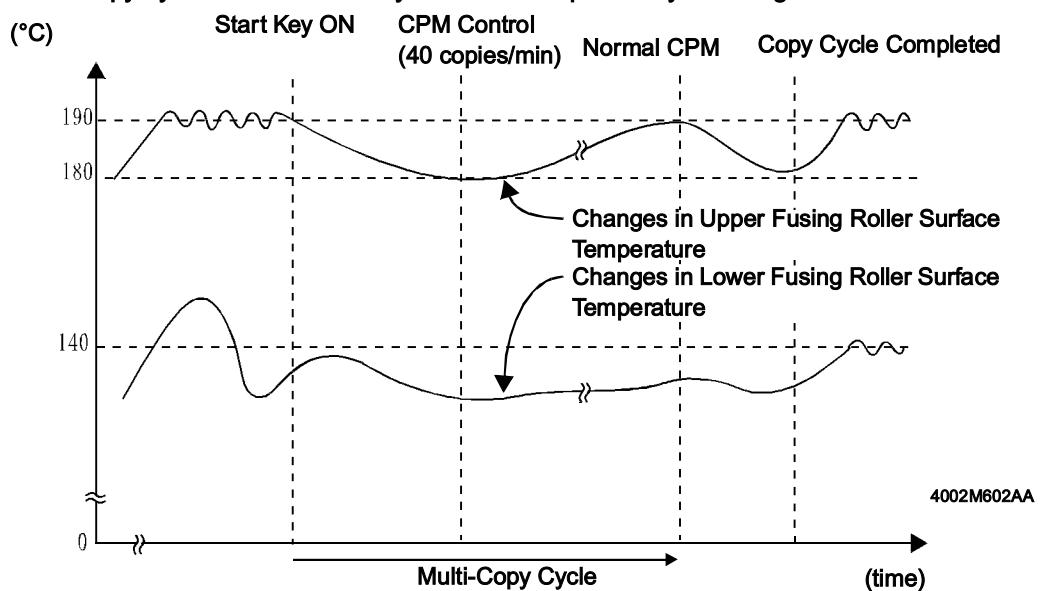
- The Fusing Roller surface temperature goes down in a multi-copy cycle, resulting in degraded fusing performance.
  - ↓
- CPM is decreased.
  - ↓
- A greater interval results between sheets of paper, which gives time for the Fusing Roller surface temperature to increase and recovers good fusing performance.
  - ↓
- The normal CPM is set again.

### 2. Details

- During the CPM control, the copier provides a greater interval between scan motions and between sheets of paper, with the system speed remaining unchanged.
- The CPM control is usually activated if a multi-copy cycle is run immediately after the power has been turned ON in the morning when the Fusing Rollers remain cool.
- In times other than early morning, the Fusing Roller is heated from the inside and, even with a multi-copy cycle run, the CPM control is not readily activated.
- It can, however, be activated even at times other than early morning, when heavyweight (g/m<sup>2</sup>) paper or large-size paper is used.

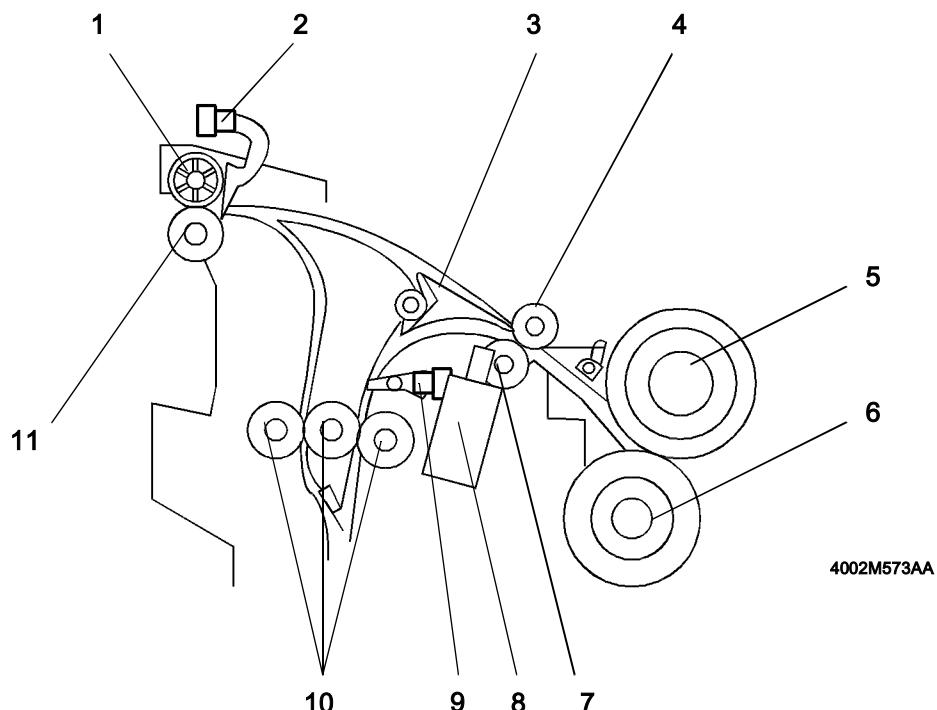
Normal	Paper Size	CPM Control
47 or 55 copies/minute	A4C or Letter C	40 copies/minute

\* A multi-copy cycle run immediately after warm-up in early morning:



## 21. EXIT/DUPLEX SWITCHING SECTION

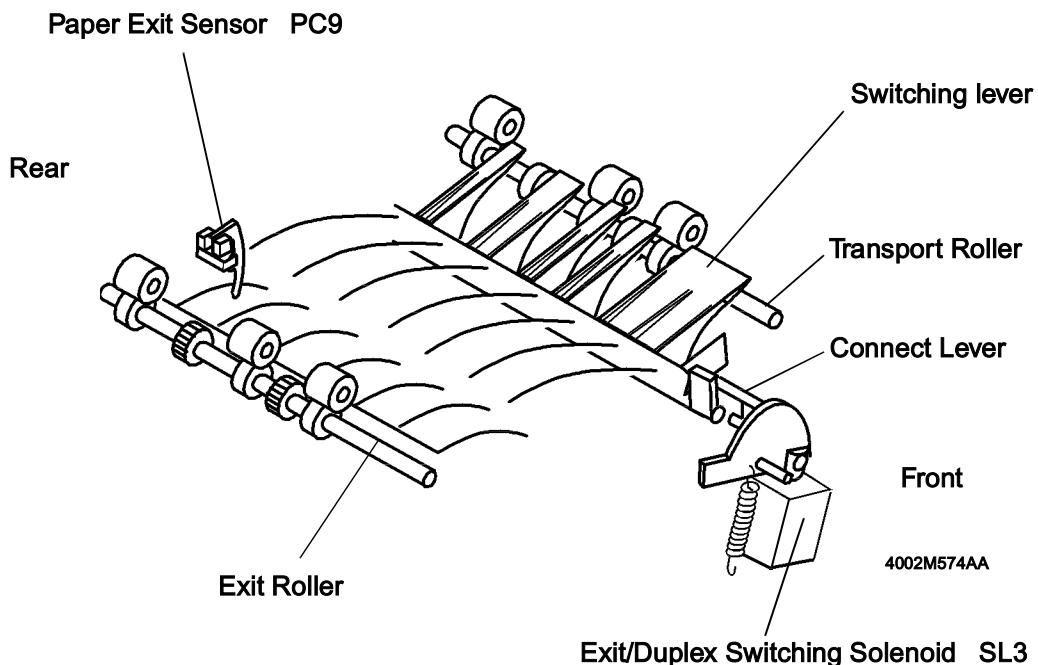
The Exit/Duplex Switching Unit switches the paper path to feed the copy out onto the Exit Tray or into the Turnover Unit.



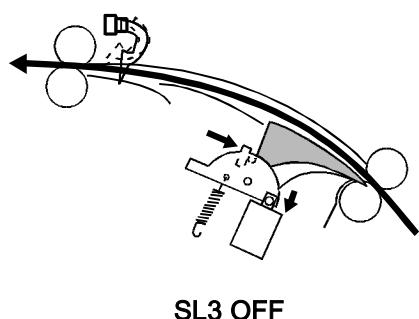
- |                             |  |
|-----------------------------|--|
| 1. Exit Roll                | 8. Exit/Duplex Switching Solenoid<br>SL3 |
| 2. Paper Exit Sensor<br>PC9 | 9. Turnover Feed Entry Sensor<br>PC7     |
| 3. Exit Switching Lever     | 10. Triple Roller                        |
| 4. Transport Roll           | 11. Exit Roller                          |
| 5. Upper Fusing Roller      |  |
| 6. Lower Fusing Roller      |  |
| 7. Transport Roller         |  |

## 21-1. Exit/Duplex Switching Mechanism

The paper path to the Exit Tray or to the Turnover Unit is selected by operating the Exit/Turnover Switching Solenoid.

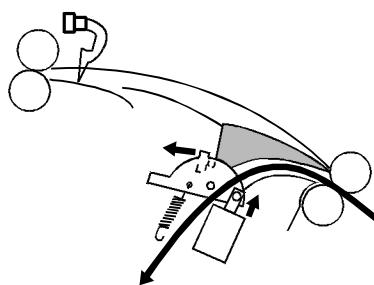


Sheet is ejected to Exit Tray



SL3 OFF

Sheet is ejected to Turnover Section



SL3 ON

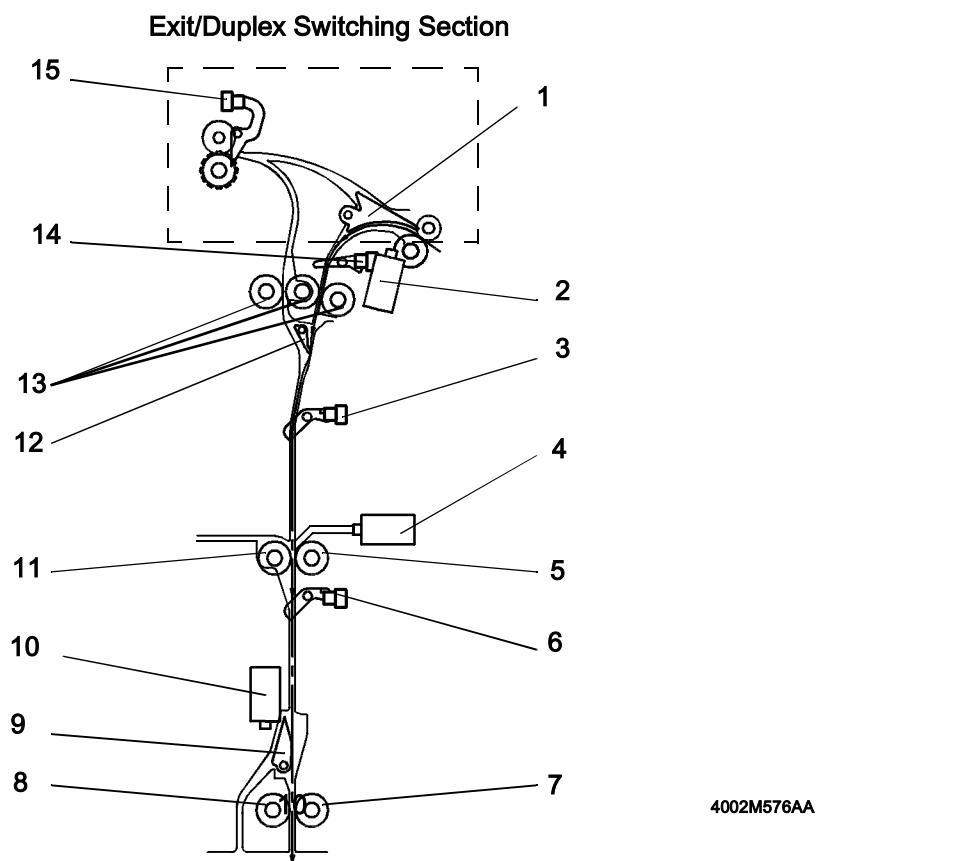
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	CONTROL SIGNAL	ON	OFF	WIRING DIAGRAM
SL3	PWB-A PJ9A-2B	L	H	1 - F

	CONTROL SIGNAL	Blocked	Unblocked	WIRING DIAGRAM
PC9	PWB-A PJ9A-3A	H	L	1 - E

## 22. TURNOVER SECTION

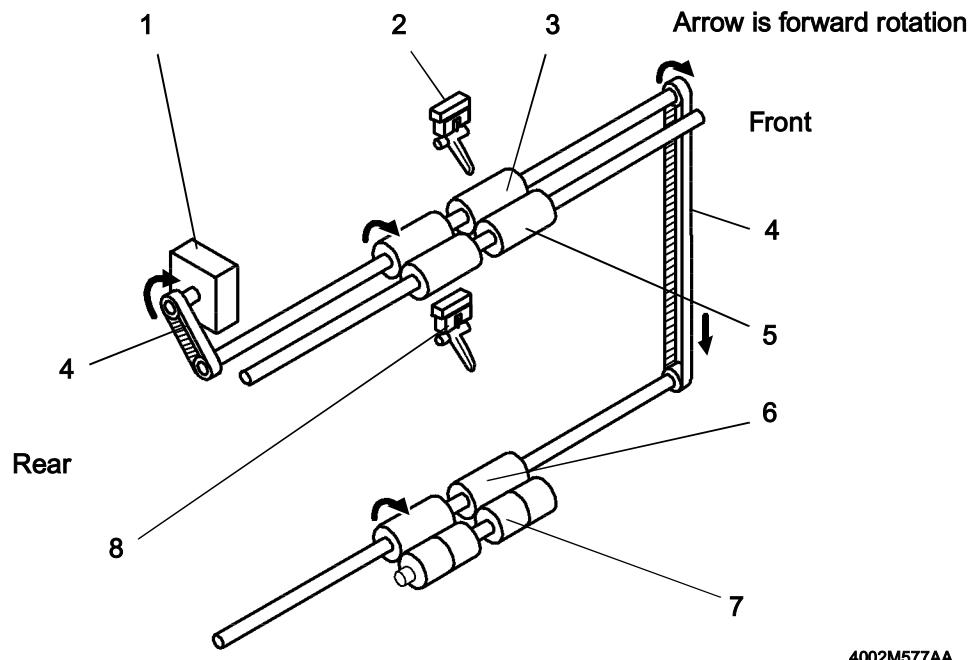
The turnover unit reverses the copy fed from the Exit/Turnover Switching Unit and feeds it into the Duplex Unit.



- 1. Exit Switching Lever
- 2. Exit/Duplex Switching Solenoid  
SL3
- 3. Turnover Feed Jam Sensor  
PC8
- 4. Turnover Roller Retraction Solenoid  
SL1
- 5. Turnover Transport Roller 1
- 6. Turnover/Exit Sensor  
PC27
- 7. Turnover Transport Roller 2
- 8. Turnover Roll
- 9. Turnover Roller Switching Lever
- 10. Turnover Route Switching Solenoid  
SL6
- 11. Turnover Roller
- 12. Flapper
- 13. Triple Roller
- 14. Turnover Feed Entry Sensor  
PC7
- 15. Paper Exit Sensor  
PC9

## 22-1. Turnover Drive Mechanism

The Turnover Unit is driven by a motor.



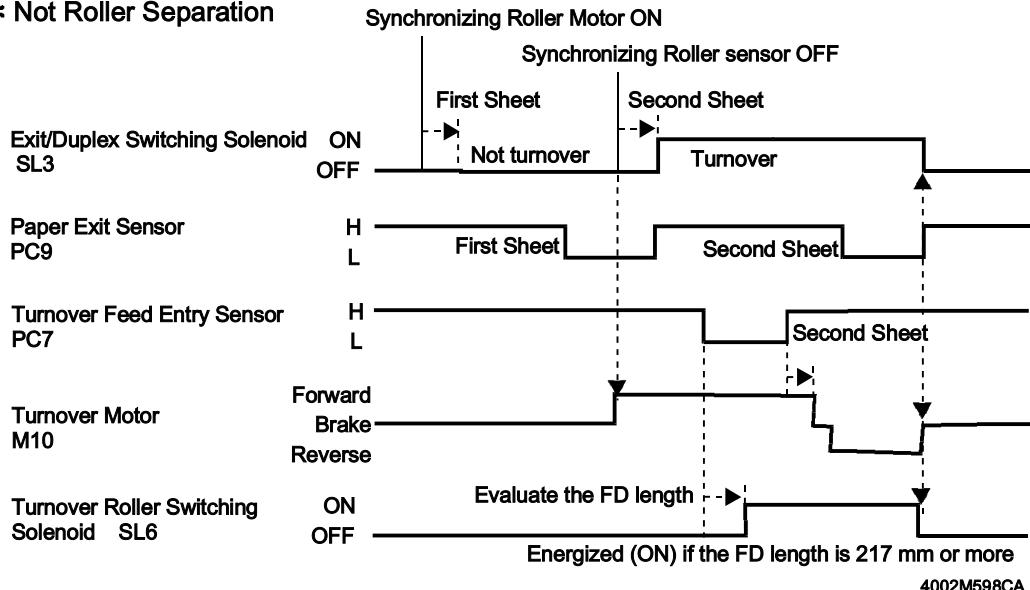
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- |                                    |                                 |
|------------------------------------|---------------------------------|
| 1. Turnover Motor<br>M10           | 5. Turnover Roller              |
| 2. Turnover Feed Jam Sensor<br>PC8 | 6. Turnover Transport Roller 2  |
| 3. Turnover Transport Roller 1     | 7. Turnover Roll                |
| 4. Timing Belt                     | 8. Turnover/Exit Sensor<br>PC27 |

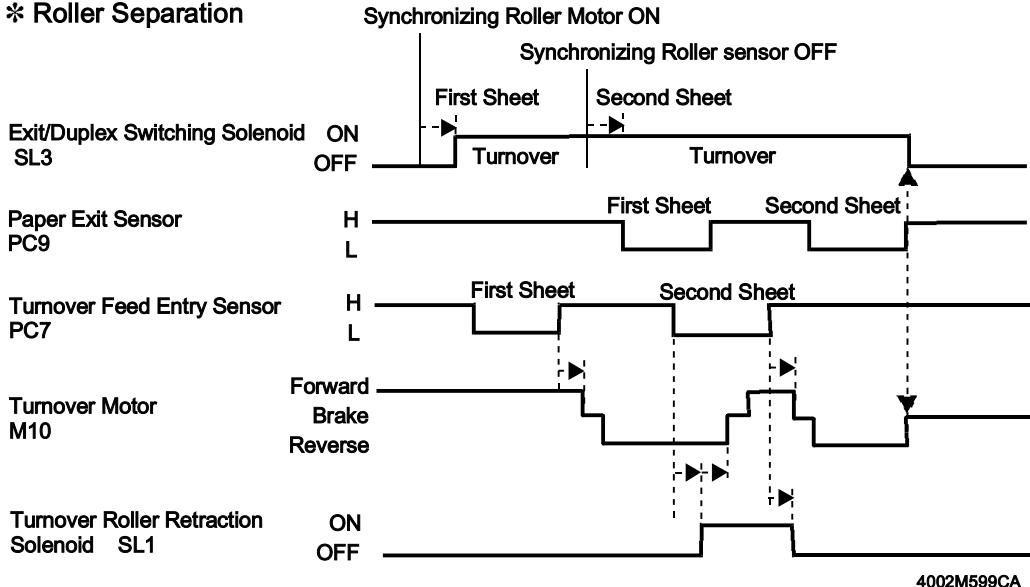
## 22-2. Turnover Control

- The paper transport direction is selected by turning the motor forward or backward.
- A sensor on the paper path is used to determine the timing at which the direction of motor rotation is switched from backward to forward, or vice versa.

\* Not Roller Separation



\* Roller Separation

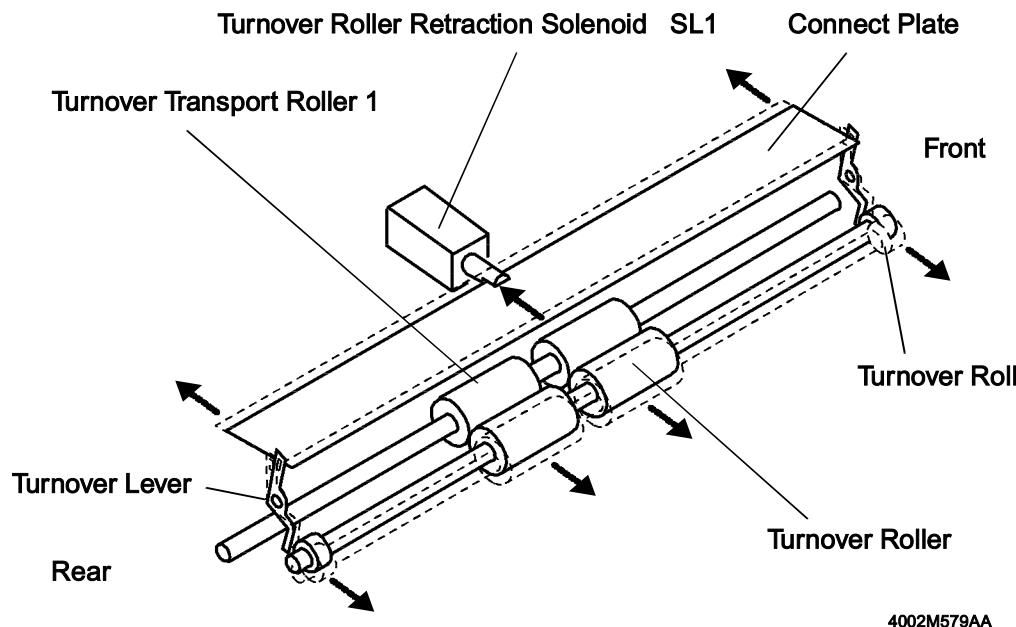


	CONTROL SIGNAL	ON	OFF	WIRING DIAGRAM
SL6	PWB-A PJ9A-4B	L	H	1 - H
M10	PWB-A PJ8A-12~15	Pulse Output		1 - I

	CONTROL SIGNAL	Blocked	Unblocked	WIRING DIAGRAM
PC7	PWB-A PJ8A-9	H	L	1 - H
PC8	PWB-A PJ8A-6	H	L	1 - G
PC27	PWB-A PJ8A-3	H	L	1 - G

### 22-3. Turnover Roller Separation Control

- The Turnover Drive Roller is temporarily separated from the Turnover Driven Roller in the event that, during a multi-copy cycle using large-sized paper, the leading edge of the subsequent paper reaches the Turnover Drive/Driven Rollers before the trailing edge of the preceding paper moves past them.
- The Turnover Drive/Driven Rollers are separated from each other by energizing and deenergizing the Turnover Roller Separation Solenoid.



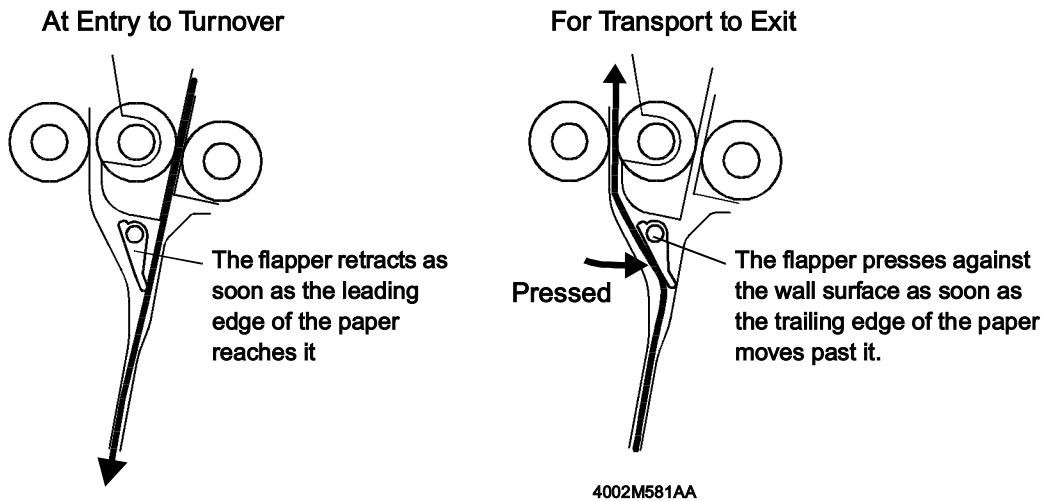
\* Broken line shows the operation when SL1 is turned ON

	CONTROL SIGNAL	ON	OFF	WIRING DIAGRAM
SL1	PWB-A PJ9A-2B	L	H	1 - H

## 22-4. Turnover/Exit Mechanism

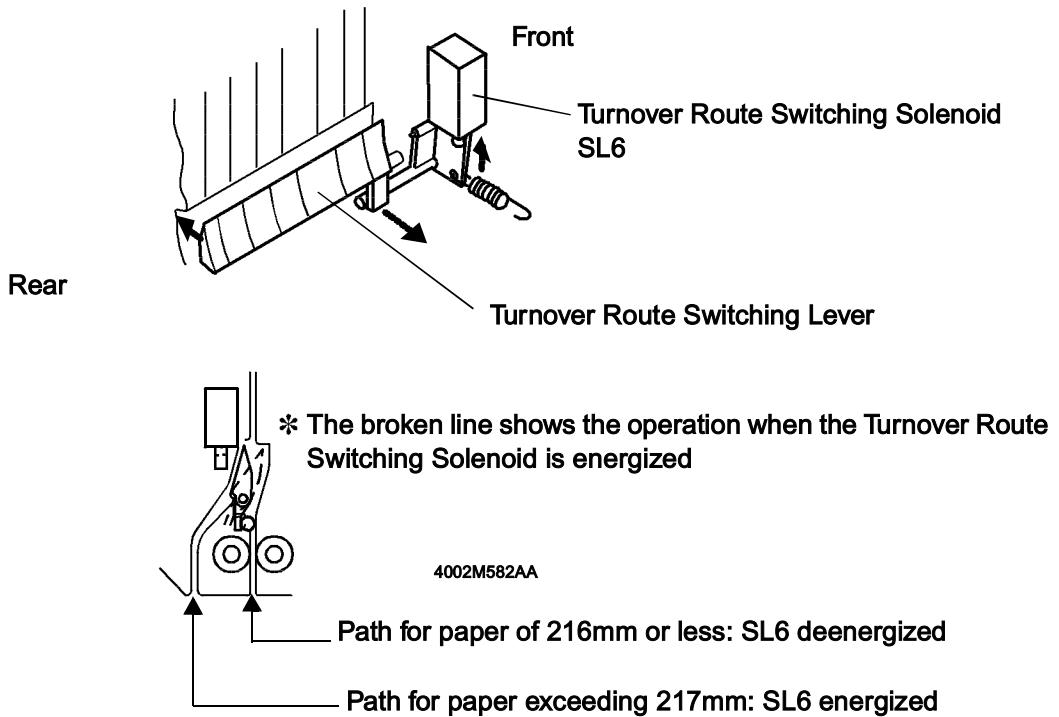
### (1) Selection of Turnover or Exit Path

A flapper is used to select the paper exit path when the paper is to be turned over and fed out of the copier.



### (2) Path for Accommodating Paper Longer Than A4L

To turn over and feed out of the copier paper longer than A4L (exceeding 216 mm), the Turnover Route Switching Solenoid is energized, thereby preventing a paper misfeed.



	CONTROL SIGNAL	ON	OFF	WIRING DIAGRAM
SL6	PWB-A PJ9A-4B	L	H	1 - H

## 23. OTHER MECHANISM

### 23-1. Memory Backup

#### Image Processing Board Backup RAM

- NVRAM (backup RAM) mounted on the Image Processing Board (PWB-B) stores the Touch Panel-related adjustment values, and User's Choice and other settings as well as counter values.
- NVRAM has a built-in battery that ensures that the contents of the memory are not lost even when power to the copier and PWB-B is shut down, or when NVRAM is demounted from the PWB-B.

#### NOTES

- When replacing the PWB-B, demount NVRAM from the old PWB-B and mount it to a new PWB-B.
- When the NVRAM is replaced, it is necessary to make all settings again to restore the contents of the memory. For the setting values, refer to the Adjust Label and those before replacement.

\* Paper Separator Corona voltage data entered on Adjust Label

The same Adjust Label as that used on other models is used for this copier model and the Paper Separator Corona voltage data are to be entered at the locations indicated below.

ADJUST(PRINTER)	SET	S/No		ADJUST(EDH)	SET		
REGIST (CD)	1st			ZOOM(FD)			
	2nd			FEED(2)			
	3rd			FEED(FD)			
	4th			FEED(CD)			
	Manual			S-ADF(FD)			
	LCT			S-ADF(CD)			
	DUPLEX			LOOP(1)			
	600dpi			LOOP(2)			
REGIST (CD)	400dpi			POSITION			
	600dpi						
ZOOM(FD)				SCH	B1	*1	
FUSING INPUT				SCH	B2	*2	
ID				SCH			
ATDC(SET)				SCH			
ADJUST(IR)				SCH			
ZOOM(CD)				SCH			
ZOOM(FD)				SCH			
SCALE(FD)				SCH			
SCALE(CD)				SCH			

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\*1: Paper Separator Corona Voltage 1

\*2: Paper Separator Corona Voltage 2

## **23-2. Flash Memory**

- Flash memory is used for updating data when upgrading software.
- Insert a memory card, in which data has previously been written, into the socket on the Memory Board and perform the updating procedure. This rewrites the data.

Applicable Boards: PWB-A, PWB-B

For details, refer to DIS/REASSEMBLY, ADJUSTMENT.

---

**NOTE**

*NEVER attempt to remove or insert the memory card with the copier turned ON.*

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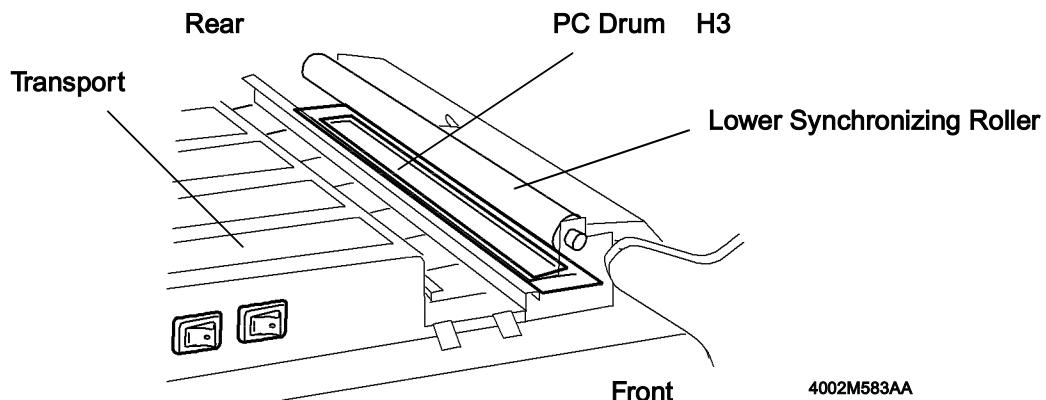


### 23-3. Dehumidifying Mechanism

#### (1) PC Drum Dehumidifying

A heater is used to prevent condensation from forming on the surface of the PC Drum due to changes in temperature and humidity.

	Power Cord	Power Switch	Drum Dehumidifying Switch
Heater ON conditions	IN	OFF	ON

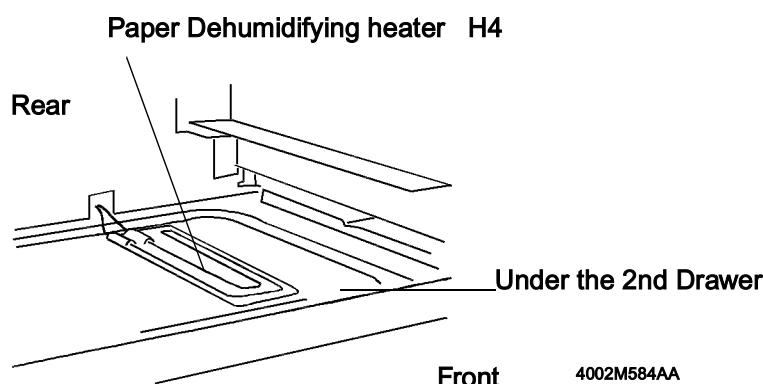


	CONTROL SIGNAL	ON	OFF	WIRING DIAGRAM
H3	PWB-C PJ5C-2B	L	H	4 - A

#### (2) Paper Dehumidifying Mechanism

A heater is used to prevent image transfer failure from occurring due to damp paper as a result of variations in the environmental conditions (temperature and humidity) surrounding the copier.

	Power Cord	Power Switch	Paper Dehumidifying Switch
Heater ON conditions	IN	OFF	ON



	CONTROL SIGNAL	ON	OFF	WIRING DIAGRAM
H4	CN215-2	L	H	27 - A

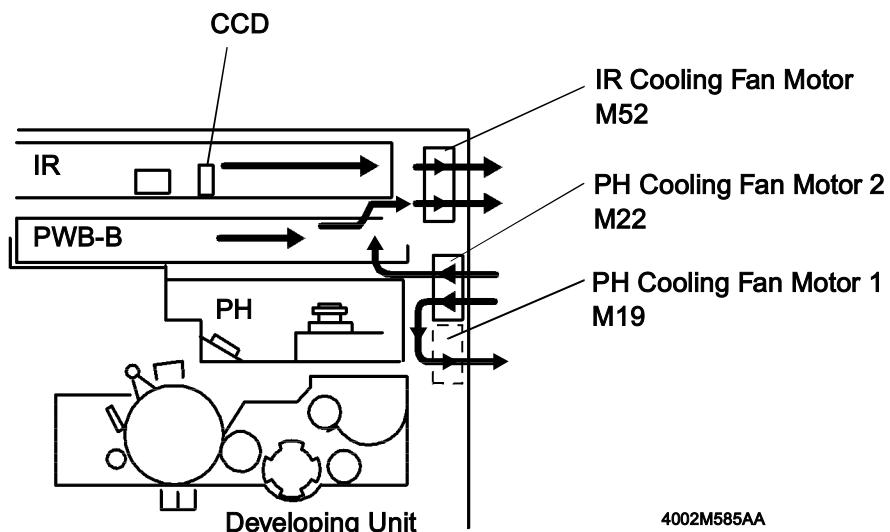
## 23-4. Cooling Mechanism

### (1) IR Section Cooling Mechanism

A fan motor draws air from the outside into the inside of the copier to cool the IR (especially the Exposure lamp, and CCD Sensor), PH and PWB-B.

Speed Control	Plugged in*	Stand-by	Copy Cycle
PH Cooling Fan Motor 1	M19	Stop	Stop
PH Cooling Fan Motor 2	M22	Stop	half
IR Cooling Fan Motor	M52	Stop	half

\* Plugged in: Where Sleep or Auto Shut OFF is activated



	CONTROL SIGNAL	ON	OFF	WIRING DIAGRAM
M19	PWB-IC PJ4IC-9	L	H	18 - H
M22	PWB-IC PJ4IC-3	L	H	18 - I
M52	PWB-IC PJ4IC-6	L	H	21 - H

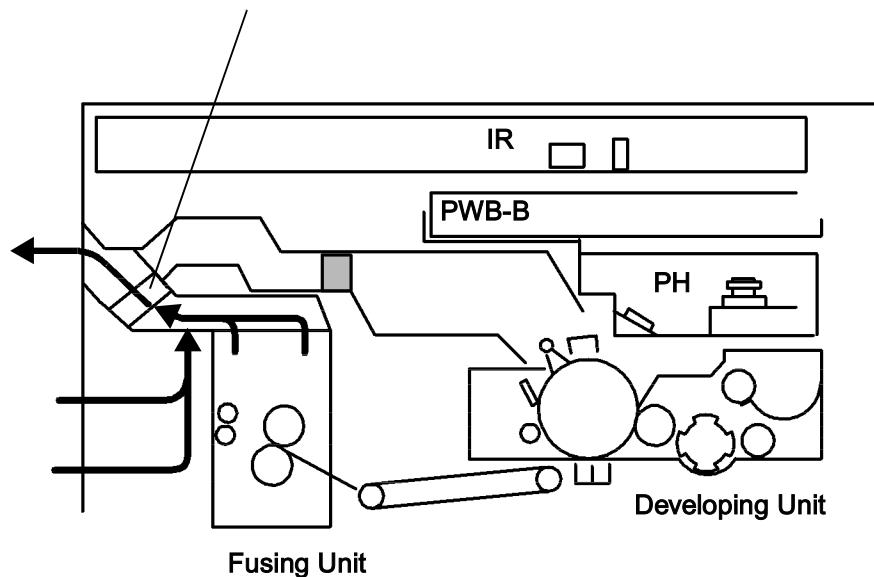
## (2) Fusing Section Cooling Mechanism

A fan motor draws air from the area around the Fusing Unit to the outside to prevent the copier interior temperature from running high.

Speed Control	Plugged In*	Wait	Copy	JAM	Trouble	Front Door open	pre-Heat
M23	stop	Half	Full	Half	Half	Half	stop

\* Plugged in: Where Sleep or Auto Shut OFF is activated

Fusing Unit Cooling Fan Motor M23



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	CONTROL SIGNAL	ON	OFF	WIRING DIAGRAM
M23	PWB-C PJ13C-3	L	H	1 - C

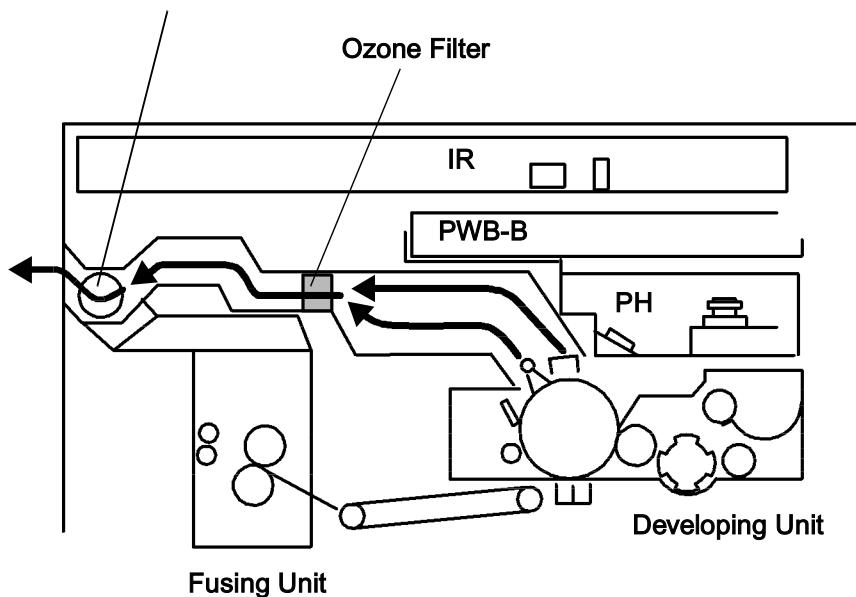
### (3) Copier Interior Cooling Mechanism

A fan motor draws air from the inside of the copier to prevent the copier interior temperature from running high. The Ozone Filter absorbs ozone produced inside the copier.

Speed Control	Plugged In*	Wait	Copy	JAM	Trouble	Front Door open	pre-Heat
M18	stop	stop	Full	stop	stop	stop	stop

\* Plugged in: Where Sleep or Auto Shut OFF is activated

Ventilation Fan Motor M18



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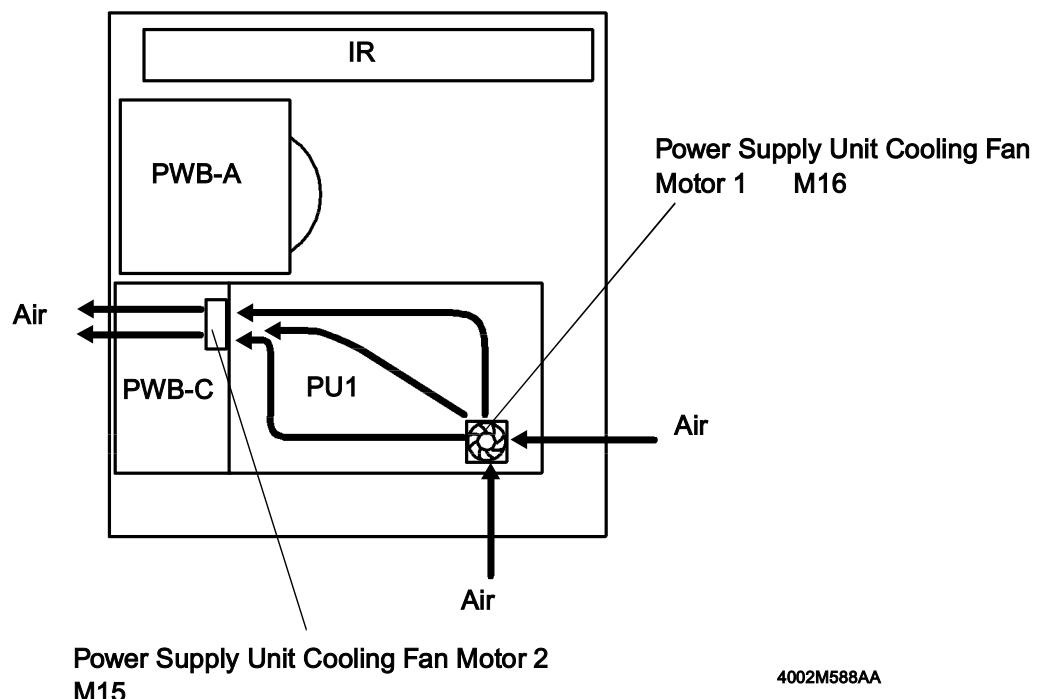
	CONTROL SIGNAL	ON	OFF	WIRING DIAGRAM
M18	PWB-A PJ9A-5B	L	H	13 - B

#### (4) Power Supply Section Cooling Mechanism

A fan motor draws air from the area around the Power Supply Unit to the outside to prevent the Power Supply Unit temperature from running high.

Speed Control	Plugged In*	Wait	Copy	JAM	Trouble	Front Door open	pre-Heat
M15	stop	Half	Full	stop	stop	stop	stop
M16	stop	Half	Full	Half	Half	Half	stop

\* Plugged in: Where Sleep or Auto Shut OFF is activated



	CONTROL SIGNAL	ON	OFF	WIRING DIAGRAM
M15	PWB-A PJ6A-13	L	H	13 - A
M16	PWB-C PJ3C-3	L	H	13 - B